Family Educational Involvement and Social Capital: Potential Pathways to Educational Success for Students of Immigrant Families

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FAMILY EDUCATIONAL INVOLVEMENT AND SOCIAL CAPITAL: POTENTIAL PATHWAYS TO EDUCATIONAL SUCCESS FOR STUDENTS OF IMMIGRANT FAMILIES

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Abstract

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Family educational involvement has been identified as a particularly beneficial practice for the achievement and behavioral outcomes of all students, including ethnic-minority students from families who have low levels of income, education, and English language proficiency. However, despite the associated benefits and education policymakers' emphasis on increasing family-school partnerships, not all families are involved and the explanation for differing involvement patterns has not been fully explored.

In general, immigrant families engage in fewer educational involvement activities in comparison to their native-born counterparts. Although they want their children to excel in school, many face socio-cultural barriers to educational involvement. Moreover, most schools are not equipped to meet their non-academic needs. On the other hand, immigrant families tend to have close family and community ties, which have been linked to family and child well-being. As a result, social capital may be an asset of immigrant families that can be leveraged to promote their educational involvement.

With a selective focus on immigrant children and families from the Child Development Supplement of the Panel Study of Income Dynamics ($N = 189$), this dissertation relied on path analyses to garner empirical support for a theoretically-based model linking social capital with family perceptions and attributions, home- and school-based family educational involvement, and student outcomes (i.e., achievement, behavior problems, positive behavior). Results

demonstrated that social support was positively associated with immigrant families' self-efficacy and perceptions of opportunities for involvement. In turn, families with higher levels of self-efficacy engaged in more home-based involvement activities. Children in immigrant families with a role construction around education in alignment with the dominant culture of the U.S. demonstrated better child achievement but worse behavior outcomes than children from immigrant families with a role construction unaligned with dominant U.S. culture. Lastly, in contrast to extant literature, immigrant families' school-based educational involvement was not associated with any family perceptions or attributes or child outcomes. Implications of both significant and null findings are discussed for developmental science, practice, and policy.

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Table of Contents

	Page
LIST OF FIGURES…….....	ii
LIST OF TABLES……	iii
CHAPTER 1: INTRODUCTION…….....	1
CHAPTER 2: LITERATURE REVIEW…….....	4
CHAPTER 3: METHODS…….....	24
CHAPTER 4: RESULTS…….....	34
CHAPTER 5: DISCUSSION……..	51
REFERENCES…….....	76
APPENDICES	
Appendix A: Construct Measures and Items ……	94
Appendix B: Transformation of Non-normally Distributed Study Variables …..……...……..	99
Appendix C: Path Model Results with all Outcome Variables in One Model …..……...…….	100
Appendix D: Sample Chi Square Comparison for Constrained and Unconstrained Multi-group Models……..…..	101
Appendix E: Path Models using Residuals from Achievement Regressed on Child Age …….	102
Appendix F: Hierarchical OLS Regressions Models……..	103

List of Figures

Page

Figure 1. Conceptual Model of Research Questions……..... 22

Figure 2. Final Contemporaneous Path Model with Standardized Coefficients for Achievement……... 48

Figure 3. Final Contemporaneous Path Model with Standardized Coefficients for Behavior Problems…… 48

Figure 4. Final Contemporaneous Path Model with Standardized Coefficients for Positive Behavior……..…… 49

List of Tables

Page

Table 1. Descriptive Statistics for Covariates…….. 35

Table 2. Weighted Correlations for Study Variables…… 39

Table 3. Weighted Unstandardized FIML Estimates and Selected Fit Indices for Path Models……. 40

Table 4. Weighted Unstandardized FIML Estimates and Selected Fit Indices for Achievement Path Models …….. 42

Table 5. Weighted Unstandardized FIML Estimates and Selected Fit Indices for Behavior Problems Path Models……. 44

Table 6. Weighted Unstandardized FIML Estimates and Selected Fit Indices for Positive Behavior Path Models……. 46

Table 7. Weighted OLS Regression Models with Covariates: Involvement Antecedents Regressed on Social Capital…… 104

Table 8a. Weighted OLS Regression Models with Covariates: School Involvement Regressed on Involvement Antecedents……. 106

Table 8b. Weighted OLS Regression Models with Covariates: School Expectations Regressed on Involvement Antecedents……. 107

Table 8c. Weighted OLS Regression Models with Covariates: Home Involvement Regressed on Involvement Antecedents…….. 108

Table 9a. Weighted OLS Regression Models with Covariates: Academic Achievement… 110

Table 9b. Weighted OLS Regression Models with Covariates: Behavior Problems…….. 111

Table 9c. Weighted OLS Regression Models with Covariates: Positive Behavior…… 112

Page

Table 10. Weighted OLS Regression Models with Covariates:
Latino Families Only…… 114

Table 11a. Weighted OLS Regression Models with Covariates: Families
with Low Levels of Educational Attainment……..... 115

Table 11b. Weighted OLS Regression Models with Covariates: Families with
High Levels of Educational Attainment…… 116

Table 12a. Weighted OLS Regression Models with Covariates: Children U.S. Born….. 117

Table 12b. Weighted OLS Regression Models with Covariates: Children
Foreign Born…….. 118

Table 13a. Weighted OLS Regression Models with Covariates: Male Child…… 119

Table 13b. Weighted OLS Regression Models with Covariates: Female Child……... 120

Chapter 1: Introduction

There has been an increasing recognition that families are a key resource for helping to promote children's educational success and that learning is optimized when families and schools collaborate. Meta-analyses of a large body of research support the notion that family educational involvement (FEI) is positively associated with student outcomes (e.g., Fan & Chen, 2001; Jeynes, 2007). In general, children whose families are highly involved display better achievement than children whose families are less involved, with effect sizes ranging from small to moderate. Very little of this empirical work, however, has been conducted with the fastest growing segment of the K-12 population in the U.S., namely the children of immigrants.

The social and economic future of the United States depends increasingly on investments in the life chances of immigrant children (Hernandez, 1999; Takanishi, 2004). To support student achievement, family educational involvement has been targeted by education reform policies such as No Child Left Behind (U.S. Department of Education, 2001). Although immigrant families want their children to excel in school, many face socio-cultural barriers to family educational involvement (Carreón, Drake, Calabrese Barton, 2005; Delgado-Gaitan, 2004; Peña, 2000; Ramirez, 2003); factors such as limited English language ability and unfamiliarity with the school system in the United States, for example, have been identified as serious obstacles to involvement (Turney & Kao, 2009). In addition, most schools are not equipped to build on the socio-cultural strengths of immigrant children, or meet their non-academic needs (Han, 2008). English language learners are, in particular, likely to attend high-poverty, low-resource schools (Crosnoe, 2005; Suárez-Orozco & Suárez-Orozco, 1995, 2001). Yet, among newcomer families, there is tremendous between-group *and* within-group variability with regard to their alignment

with U.S. educational culture and child-rearing strategies (Suárez-Orozco & Suárez-Orozco, 1995, 2001).

Social capital, a factor that has been linked to a variety of positive child outcomes, may help explain some of this variability (Putnam, 2000). The relational and context-dependent nature of social capital emphasizes the strengths of immigrant families, such as close family and community ties, which may offer a means for overcoming the unique barriers to educational involvement that immigrant families face. Indeed, considerations of the potential value of social capital for immigrant children and families is aligned with ecological perspectives of development based on the notion that the connections between children's immediate and more distal environments can have important repercussions for their developmental and educational outcomes.

The objective of this dissertation is to use an ecological framework to investigate how social capital is related to the ways in which immigrant families are involved in their children's education and, in turn, how that involvement is related to children's achievement and socio-emotional well-being. Specifically, social capital will be used to explore the relationship between family perceptions and attributions, home- and school-based family educational involvement, and student educational outcomes. It is hypothesized that in comparison to other immigrant families, immigrant families with high levels of social capital will hold perceptions of educational involvement that are more aligned with those held by the majority of U.S. culture, have higher levels of self-efficacy, and perceive more opportunities for involvement. In turn, these families will engage in more educational involvement activities, particularly in school as they become cognizant of opportunities and expectations for family involvement held by school personnel. Similar to findings from studies of students from native families, higher levels of

involvement are hypothesized to correspond to higher levels of literacy achievement and better socio-emotional outcomes for students from immigrant families. In comparison, immigrant families with lower levels of social capital are hypothesized to engage in fewer school-based involvement activities than their counterparts with higher levels of social capital because of barriers to involvement stemming from families' misconceptions about their role in their children's education, miscommunication with school staff, and a lack of information and awareness of involvement opportunities and school expectations. Accordingly, the developmental value of the educational involvement activities within the home for families with lower levels of social capital is hypothesized to be greater for children's academic and socio-emotional outcomes.

Chapter 2: Literature Review

Demographic Changes in the United States

The demographic landscape of the United States has changed dramatically over the past few decades due to an increase in the immigrant population. The most striking increase occurred between 1990 and 2007 when the foreign-born population doubled (Fortuny & Chaudry, 2009). Moreover, recent data indicate that this upward trend is continuing, although at a slower rate. Between 2009 and 2010 alone, the immigrant population increased by 3.7 percent. Indeed, 13 percent of the U.S. population, roughly 40 million people, identify as foreign-born (U.S. Census Bureau, 2010).

Unlike previous waves of immigrants, the most recent group of newcomers is comprised primarily of migrants from the continental areas of Latin America, Asia, and Africa (Hernandez, Denton, & Macartney, 2008). The differences among immigrants between and within continental areas are widespread as exemplified by extensive cultural, linguistic, and socioeconomic diversity (Suárez-Orozco & Suárez-Orozco, 2001). Moreover, although the majority of the population is primarily concentrated in six major "destination" states (i.e., California, Texas, New York, Florida, Illinois, and New Jersey), the largest increases in the immigrant population have been occurring in many other states around the country (Urban Institute, 2006).

Educational and Socio-Emotional Outcomes of Children from Immigrant Families

Changes in the child population have mirrored the demographic shift in the general population, but to a more dramatic extent. Census data indicate that 1 in 5 children have at least one foreign-born parent and that this proportion increases to 1 in 4 when considering younger children (Fortuny, Hernandez, & Chaudry, 2010). Between 1990 and 2007, immigrant children accounted for 77 percent of the overall increase of the country's child population rendering them

the fastest growing segment of the U.S. population (Fortuny & Chaudry, 2009; Suárez-Orozco, Suárez-Orozco, & Todorova, 2008). The majority of immigrant children are from two major racial groups, Asian and Latino, with the highest proportion being Latino: 18 percent of children of immigrants and 24 percent of foreign-born children were Asian while 53 percent of children of immigrants and 51 percent of foreign-born children were Latino. In fact, three-quarters of all Asian and Latino elementary school children identified as being foreign-born or having an immigrant parent (Capps et al., 2005). Given that immigrant children will one day represent a major segment of the U.S. labor force, their educational success should be a national priority.

The academic performance of immigrant students, however, is quite varied, with some groups demonstrating much lower achievement compared with the non-immigrant population, but other groups exhibiting achievement that is on par with or even surpasses that of the non-immigrant population. A comparison of the educational achievement of the two largest immigrant groups illustrates these diverging trajectories. At all age levels, the academic performance of children of Asian immigrants is generally consistent with or even surpassing that of native-born Caucasian families while children of Latin American immigrants typically lag behind their peers in reading and mathematics (Caplan, Choy & Whitmore, 1992; Kao & Tienda, 1995; Suárez-Orozco & Suárez-Orozco, 1995). Moreover, this concerning trend is apparent early on as evidenced by gaps in their levels of school readiness; children with Latin American origins, for instance, generally display lower levels of school readiness in comparison to their native-born Caucasian peers. Children with Asian-origins, on the other hand, exhibit school readiness levels that are, on average, similar to their peers from native-born Caucasian families (Crosnoe, 2011).

In comparison to academic outcomes, less is known about the socio-emotional outcomes of children from immigrant families, particularly of young children, as most research in this area

has been conducted on adolescents and monolingual English speakers. Literature suggests that children of immigrants are susceptible to being at higher risk of anxiety and depression because of the psychological strains that are inherent to the adaptation process (Perreira & Ornelas, 2011). However, some studies find that adolescents from immigrant families generally display socio-emotional outcomes that are similar or better than their native-born counterparts (Aronowitz, 1984). Moreover, there are differences in socio-emotional outcomes among children of immigrant families when looking at assimilation indicators, such as generation status and primary language spoken in the home. First generation immigrant students (i.e., foreign-born students) display lower levels of depression than second generation immigrant students (i.e., students with a foreign-born parent; Harker, 2001), while youth from families who speak a language other than English in the home report lower self-concept than their counterparts who live in homes where English is the primary language (Harker, 2001; Kao, 1999). Differences in educational and socio-emotional outcomes of children of immigrants are likely to be attributable, in part, to a myriad of migration-related stresses, such as pre-migration factors (e.g., pre-migration educational and trauma experiences) and post-migration experiences with the receiving country (e.g., acculturation, racism), that are transmitted to the child through family processes (García-Coll & Magnuson, 1997; Suárez-Orozco & Suárez-Orozco, 2001).

Family Factors linked to Educational Outcomes. To understand why students from immigrant families may differ so widely in their academic performance within and between groups, it is helpful to use a contextual approach and consider the family characteristics of these students. Family socioeconomic factors such as low income, low educational attainment, and limited English language proficiency have been linked to poorer student outcomes (Brooks-Gunn & Duncan, 1997; Hill et al., 2004). Low income is a highly relevant risk-factor for many

immigrant families because over half of students from immigrant families (54 percent) fall into this group (Urban Institute, 2006). Additionally, immigrant families tend to have lower levels of educational attainment in comparison to their native-born counterparts. Whereas less than 10 percent of elementary school children from native-born families had parents with less than a high school degree, more than 30 percent of elementary school children from immigrant families fell into this category (Urban Institute, 2006).

Moreover, low English-language skills limit employment opportunities to jobs with low pay, long hours, and irregular work schedules (Kossoudji, 1988), which in turn, may limit the amount of time and material resources immigrant families can invest in their children's education. In addition, the limited English-language skills of family members may hinder their ability to effectively communicate with school personnel about their children's academic progress and effectively navigate the school system, especially if they are unfamiliar with the school system in the United States (Finders & Lewis, 1994; Moles, 1993; Ramirez, 2003; Turney & Kao, 2009). In fact, more than half of immigrant families have difficulty speaking in English; accordingly, children from immigrant families have little exposure to English within the home prior to starting school, which is problematic because English language fluency is associated with children's positive academic adjustment (Urban Institute, 2006).

Wide variability within immigrant groups is evident with regard to these socioeconomic and language barriers, however. Children with parents from India or the Philippines, for example, are less likely to be from low-income families, live in non-English speaking households, and have parents without a high school degree in comparison to other Asian children with immigrant parents (Capps et al., 2005). Similarly, students from families with Cuban-origins had parents with higher levels of income and educational attainment than their other

immigrant peers with Latin American-origins (Capps et al., 2005). Variability in immigrant students' educational outcomes may be, at least in part, a result of more or less advantageous family socioeconomic and linguistic backgrounds.

Nevertheless, some students from immigrant families still exhibit positive educational outcomes despite coming from families with multiple socioeconomic risk factors. Fuligni (1997), for example, found that in comparison to counterparts from native families, adolescents from immigrant families had higher grades despite their relatively more disadvantageous socioeconomic characteristics. In part, this may be attributable to often overlooked strengths of immigrant families. Literature has found that immigrant families, for example, have high expectations for their children's educational success, are optimistic about their children's futures, value education, and are highly invested in helping their children succeed (Crosnoe, 2006; Fuligni, 1997; Kao & Tienda, 1995; Suárez-Orozco & Suárez-Orozco, 2001). Indeed, there is some evidence to suggest that high educational expectations and a high regard for education is more effective at preventing school dropout for immigrant children than family background or school performance (Gibson, 1988). Unfortunately, schools may be unclear on the best way to harness these family strengths to improve students' educational performance. Additionally, factors such as parental supervision, religious practices, and social support have been found to promote the socio-emotional well-being of first-generation immigrants despite family background and migration-related characteristics that place immigrant families at risk for psychological problems.

Given the rapid influx of such a large population of students from immigrant families, schools have been struggling to adapt to their educational needs. American schools have not had experience with educating such a large linguistically- and culturally-diverse population in more

than a century (Hernandez et al., 2008), and thus, are scrambling to find best practices to help these students succeed. Moreover, the prevalence of such a large student population with diverse needs taxes a system that is already struggling from budget cuts and high-stakes testing. Indeed, students from immigrant families tend to attend schools that are already overwhelmed with problems such as staff shortages, crowding, and poor instructional materials (McDonnell & Hill, 1993). As the population of students from immigrant families continues to increase, it is imperative to find a way to maximize these students' academic success with these obstacles in mind as their academic success has key implications for the nation's social and economic future.

Family Educational Involvement

Family educational involvement has garnered attention as an important contributor to students' educational success (U.S. Department of Education, 2001). In fact, one of the primary goals of recent education reform policy is to increase family involvement (National Education Goals Panel, 1999; National Research Council, 1996). This goal stemmed from the idea that children learn in homes as well as in schools, thus recognizing the value of family members as contributors to children's educational progress. Moreover, there is substantial evidence in the fields of education and psychology that demonstrate a positive association between family educational involvement and student outcomes across ethnic groups (Fan & Chen, 2001; Jeynes, 2005). Extant research indicates that family involvement has the strongest effects on literacy, a domain that is strongly linked to positive achievement in other academic domains (Lesaux, Hastings, Kelley, Marletta, & Russ, 2010). Indeed, several studies have found that high levels of family involvement are associated with improved academic outcomes in mathematics and positive socio-emotional outcomes (Domina, 2005; Englund, Luckner, Whaley, & Egeland, 2004; Grolnick & Slowiaczek, 1994; Hoover-Dempsey & Sandler, 1995).

Family educational involvement is a multidimensional construct that can be construed in a variety of ways (Epstein, 1995, Fan & Chen, 2001). One framework that is commonly used because of its conceptually clear distinction between involvement types categorizes family engagement into school- and home-based involvement (Christenson & Sheridan, 2001). School-based involvement encompasses interactions families have within the school or with school personnel. In the U.S., the most common forms of school-based involvement include attending parent-teacher conferences, volunteering at school, and attending school events (U.S. Department of Education, 2006). Home-based involvement, on the other hand, includes education-related activities that families engage in outside the school (e.g., communicating about school, helping with homework). Involvement activities that are not directly related to education are also included in this domain because they create an intellectually stimulating learning environment for the child (e.g., visiting the library, museums, and attending plays).

The theoretical pathways for explaining how family educational involvement leads to children's educational success include both direct and indirect mechanisms. Specifically, direct mechanisms are theorized to be skill-based while indirect mechanisms are motivation-based (Pomerantz, Moorman, & Litwack, 2007). When parents, for example, provide homework assistance or cognitive stimulation they can directly transmit academic skills to their child and model learning practices (Grolnick & Slowiaczek, 1994). Indirectly, when parents are involved in their children's education, they convey the message that school is important, which leads children to value education more highly and foster their motivation for doing well academically (Grolnick, Ryan, & Deci, 1991). Furthermore, when parents are involved in their children's education by attending school-based activities (e.g., parent-teacher conferences) and communicating with teachers and/or other students' parents, they have opportunities to learn

more about their child's academic strengths and needs as well as learn more about the culture of school, more generally. In turn, understanding their child's academic progress and the culture of schools better allows parents to align home practices with school practices, and it places parents in a better position to intervene to remedy problems (Domina, 2005).

These mechanisms are theorized to operate similarly for children's socio-emotional functioning. Parents communicate that they care about their children when they show interest in their academic life, which leads to a more secure parent-child relationship (Grolnick & Slowiaczek, 1994). In turn, this secure relationship serves as a guide for children when forming new relationships. Through positive interactions with their family, children acquire positive social skills and learn appropriate behavioral conduct (Pomerantz et al., 2007).

Given the various mechanisms through which family involvement can affect children's educational success, subgroups with "at-risk" characteristics for academic under-achievement (e.g., children from families with low-income or low maternal education or homes in which English is not the first language) may benefit uniquely from involvement (Dearing, Kreider, Simpkins, & Weiss, 2006; Domina, 2005; Tang, Dearing, & Weiss, 2012). That is, if family educational involvement promotes academic skills, positive motivational attitudes towards learning, and family-school synchrony, then children (and families) at greatest risk for lacking in these areas may benefit the most from involvement. Research findings indicate that school-based involvement matters more for the literacy achievement of students with the least educated parents than child ethnicity, maternal education, or family income, for example (Dearing, McCartney, Weiss, Kreider, & Simpkins, 2004).

These findings are particularly relevant for immigrant students, because they are more likely to come from families facing exceptional socio-economic risk. Recent estimates indicate

that as many as one in five immigrant children live in poor households, and one in two live in low-income households (incomes less than 200 percent of the federal poverty threshold); children whose parents are not fluent in English face the greatest risk of economic deprivation, with as many as 70 percent living in low-income households (Hernandez, Denton, Macartney, 2009). Indeed, there is some evidence suggesting that students from immigrant families are likely to benefit uniquely from family educational involvement. Tang and colleagues, for example, found that school involvement mattered most for the literacy skills of students from low-income, Spanish-speaking families, particularly for those who had struggled early in literacy (Tang et al., 2012).

Despite the benefits of educational involvement for students from immigrant families, not all immigrant families are highly involved. Nord and Griffin (1999) found that in comparison to native-born parents, immigrant families generally engaged in fewer education-based involvement activities (e.g., take child on educational outings, volunteer at school), although there were differences associated with country of origin. Immigrant Asian and Latino families, for example, are less likely, on average, to volunteer in schools in comparison to immigrant and native-born Caucasian families (Turney & Kao, 2009). Further, there is evidence to suggest that as immigrant Caucasian families assimilate into American culture (measured via length of residence in the U.S.), they exhibit levels of family educational involvement that are similar to their native-born counterparts while the involvement levels of immigrant Asian and Latino families generally remain lower, on average, than their native-born counterparts (Turney & Kao, 2009).

Some of these between-family differences in involvement may be due, in part, to between-family differences in ecological context, including family cultural background, working

conditions, and economic situation. The extent to which families are involved in school-based activities, for example, may be a result of cultural differences regarding how parents perceive their roles and their schools' roles in education. It is speculated that some immigrants, such as Asian parents, may be less likely to participate in involvement activities that they perceive are not directly related to their children's achievement (Kao & Tienda, 1995). In other words, families' investments in their children's education may take different forms based on complex interactions between family priorities, culture, and other aspects of ecological context.

Antecedents of involvement. Hoover-Dempsey and Sandler (1997) proposed three factors related to why and how families become involved in their children's education: parents' perception of their role in their children's education, feelings of self-efficacy in helping their children succeed in school, and perception of opportunities and invitations to become involved. First, parents are more likely to be involved when they believe it is their duty to be involved in their children's education. Second, parents need to believe that they have the ability and/or skills to help their children with their school work or that they can positively affect their academic trajectory. Third, parents are more likely to be involved when they believe that teachers, schools, and their children want them to be involved in their education and value their input.

Role construction. The first factor, role construction, is one barrier that may be of particular importance for understanding the differences in involvement between immigrant and native-born parents because it is highly dependent on parents' cultural ethnotheories (Harkness & Super, 2001). In traditional Mexican-American families, for example, the spheres of formal education and the family are separate. That is, parents are responsible for their children's moral development while the school is responsible for their children's academic development. Parents perceive that asking teachers questions about their children's progress infringes upon the domain

of the teacher, who is regarded as the expert of their children's academic education. Consequently, out of deference to and respect for the teacher, Mexican parents may be less likely to engage in traditional forms of family educational involvement (Delgado-Gaitan, 1992).

East Asian families also may be less likely to engage in school-based involvement activities because academic success is viewed as the child's responsibility not the parents', who are responsible for the financial and material resources necessary to support their children's education (Schneider & Lee, 1990). Findings such as these highlight the fact that cultural realities likely vary among immigrant groups, and that immigrant families, who retain and adhere to the values of their native country, are most likely to exhibit involvement patterns that differ from their native-born counterparts due to role construction. These findings also raise questions as to how immigrant families might best promote their children's academic success within the macro-culture of the United States and, more specifically, within the cultures of U.S. schools, institutions in which parents are generally expected to monitor and engage in their children's schooling.

Self-efficacy. The second factor, parents' feelings of self-efficacy, has been speculated to affect immigrant parents' level of involvement as well. Parents high in self-efficacy are more likely to actively engage in their children's academic development (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). However, since immigrant parents may be unfamiliar with the school system in the United States they may not feel confident in their abilities to direct their children's academic trajectory as it may be very different from their experiences in their home country (Peña, 2000). Relatedly, some immigrant parents may not have received much formal schooling in their home country, and thus, may be hesitant to become involved because they feel uncomfortable in a school setting. In contrast, immigrant parents who grew up in the United

States have the advantage of being familiar with the American school system. However, they may be less likely to be involved if they faced negative school experiences when they were younger. An equally important issue is the fact that many immigrant parents may feel that they lack the requisite English language proficiency to communicate effectively and confidently with their child's teacher (Delgado-Gaitan, 2004; Peña, 2000; Ramirez, 2003).

Opportunities. The third factor impacting family educational involvement is related to whether parents perceive that there are opportunities for them to become involved and whether parents feel that their help is of value. If parents perceive that school-based activities are the only way that they can be involved in their children's activities, they may feel that there are not enough opportunities for them to become engaged in their children's education. This may be particularly true for low-income immigrant families whose adult members are more likely to experience long work days, unstable work schedules, and work places that are located far from their homes (Moles, 1993). Additionally, low English language proficiency may be a particularly salient barrier to involvement for some immigrant groups (Tang et al., 2012). Immigrant Latino adults, for example, do not adopt English as quickly as adults from other immigrant (e.g., Asian) groups (Hirschman, 1996). Finally, the type of involvement activity that families engage in is shaped by the value families place on those activities. There is some evidence to suggest that Asian parents are less likely to volunteer in schools, for example, because they do not view that type of involvement as directly beneficial to their child's educational success (Hwa-Froelich & Westby, 2003).

In sum, these three factors are important to consider when conducting research on family educational involvement because they are associated with the ways in which families become involved. The studies conducted on the links between students' educational outcomes and the

behaviors of immigrant families to date have primarily speculated about the roles of these factors in differentiating immigrants (as a group) from non-immigrants. However, there is little quantitative empirical work demonstrating their importance for examining individual differences among immigrant families. As such, it is important to understand how these factors may enhance or impede immigrant families' proclivities to engage in certain types of educational involvement activities, and how those activities, in turn, are associated with students' academic outcomes. In addition, it is important to recognize that each of these three factors – how families construct their roles, their levels of self-efficacy, and their perceived barriers and opportunities to involvement – are themselves embedded within a larger social milieu. Beyond cultural-historical considerations, contemporary social contexts likely help shape immigrant families' role and efficacy beliefs as well as their opportunities to be involved in their children's education. A case in point may be families' social capital.

Social Capital

Social capital theory is one framework that has been used in several disciplines to understand how family-related social resources may be linked to a wide range of child well-being indicators such as rates of child abuse and teen births, percent of teen high school drop outs, and percent of teens not attending school and not working (e.g., Portes, 1999; Putnam, 2000; Sun, 1999; Yoshikawa, 2011). In most cases, social capital is used as a broadly encompassing term that refers to any and all relationships and/or social cohesion forces, which hinge on attitudes, values, trust, group membership, and participation levels, and which serve as resources for families in their efforts to survive and thrive (OECD, 2001). However, due to the relational and context-dependent nature of this construct, it has been conceptualized in a variety of ways within the field of education (Dika & Singh, 2002). Even so, one consistent theme found

across various operating definitions is the notion that social capital is associated with the ways in which individuals connect with one another to create networks that allow for efficient flow of information that benefits those within the relationship network. And, there is considerable empirical support for conceptualizing social capital as a resource. Even after controlling for demographic and socioeconomic factors related to child well-being, for example, social capital has a strong correlation with positive child outcomes (r=0.80; Putnam, 2000[1]).

Conceptualizations of social capital in education research. James Coleman, a sociologist, was one of the first theorists to use a social capital lens to understand students' academic performance. His most influential work in the field of education, *The Equality of Educational Opportunity* report (i.e., Coleman Report, 1966) was commissioned by the government to investigate the educational equality of schools in the United States. The conclusions from this seminal report stated that the effect of schools' resources and social composition on students' educational outcomes were not as important as the effect of students' family background. On-going ubiquitous debate on such conclusions notwithstanding, these findings led to a shift in educational research that placed more of an emphasis on investigating within and between family factors to explain educational outcomes, which ultimately led to his theory of social capital.

Coleman's theory of social capital defines it as a form of capital that is dependent on the mutual trust and reciprocity of social ties within and outside a family; he proposed that social capital is generated through social bonds created in family networks and the local community. Moreover, Coleman posited that social capital increases the more it is used and it has the potential of producing other types of capital (e.g., financial, cultural, human) because of three

[1] This Pearson's *r* coefficient is based on the correlation between the Social Capital Index^{SM}, a measure of how much people trust other people, volunteer, vote, join organizations, and socialize with friends, and Kids Count indexes by the Annie E. Casey Foundation, a popular measure of state-by-state child well-being.

properties: obligations and expectations, information channels, and social norms. However, based on these proposed mechanisms there is disagreement over the extent and influence of social capital that immigrant children and families possess.

Immigrant families, for example, may share high obligations and expectations with their children because immigrant parents tend to tell their children of the sacrifices that they've made to benefit their child's chances of upward mobility. As a result, children from immigrant families may feel more indebted to their parents and adhere more closely to their parents' values regarding the importance of education (Kao, 2004). Conversely, immigrant families may have little access to information because it requires having access to a network with extensive resources. Moreover, when there is physical access to resources, English language proficiency may be an issue. Since the immigration process can be isolating (Portes & Rumbaut, 1990), immigrant families may not have the necessary social capital to navigate school systems or cultural institutions to help their children succeed academically (Ramirez, 2003).

In contrast, immigrant families may experience high forms of the third type of social capital, social norms. That is, social norms that differ from traditional North American customs may be particularly influential in directing the actions of individuals living within immigrant communities from ethnic-backgrounds of low representation in the United States because their communities are more likely to be tight knit. Moreover, Kao and colleagues (2004; Kao & Rutherford, 2007) found that immigrant families tend to have lower social capital in relation to non-immigrant families, but that the social capital that they do possess has a larger impact on their well-being. Although there is evidence to suggest that social capital has positive associations with educational outcomes, it may be associated with negative educational outcomes

as well. Social norms and expectations that reinforce negative behaviors can impede academic achievement or educational engagement (Kao, 2004; Zhou & Bankston, 1998).

An alternative method for understanding social capital is to consider its bonding and bridging dimensions (Gittell & Vidal, 1998; Putnam, 2000). Although these are not mutually exclusive, this distinction highlights the fact that relationships can serve different functions, which in turn may lead to disparate outcomes. Bonding social capital or the quality of social ties is often generated in contexts, such as ethnic fraternal organizations, country clubs, or ethnic enclaves, where individuals have similar demographic or socioeconomic characteristics, and can provide each other with emotional and psychological support (Putnam, 2000). In contrast, bridging social capital or the quantity of social ties, connects individuals from diverse economic and social ecologies, and can confer benefits to its members just by association with the organization. That is, even "weak ties," which may be low in emotional support and intimate confiding, are capable of linking individuals with resourceful people from disparate social milieus to create a more diverse and extensive social network that can provide access to a wider stockpile of information and services (Granovetter, 1973; Lin & Dumin, 1986). Thus, to adequately examine the wide reaching benefits of social capital for immigrant families and their children, it is necessary to consider both the social support that individuals receive through their interactions with others as well as the number of community ties they have with organizations in their proximal ecologies.

Additionally, Edward Glaeser (2000), an economist, proposes a model for investigating social capital that includes both individual- and community-level social capital. Although his conceptualization of social capital at the individual level overlaps with human capital, his model emphasizes the importance of including person-level attributes, such as charisma and linguistic

skills, when conducting a comprehensive investigation of social capital because these attributes can evoke positive relations with others, which in turn, can be transferred to community-level social capital. Furthermore, he argues that community norms are relayed to individuals through their membership in non-professional clubs and groups. As a result, Glaeser contends that the best marker of social capital is an individual's participation in local organizations, an indicator supported by Putnam (2001) for its robust correlation to outcomes of well-being.

Indeed religious organizations and community businesses in low-income and immigrant neighborhoods have played an integral role in helping immigrants across ethnic groups to establish social ties (Ammerman, 2005; Delgado, 1997; Delgado & Santiago, 1998; McRoberts, 2003; Zhou & Kim, 2006). Within the Chinese and Korean ethnic communities, language schools, for example, not only help children to learn their native language and gain an appreciation of their culture, but they can also help immigrant and language-minority families to build social networks and garner important information for their children's academic success despite their low English-language skills (Zhou & Kim, 2006). Specific to children's educational outcomes, local community organizations such as churches, language schools, and supplementary education programs can facilitate an exchange of valuable information among families regarding important factors for educational success, such as how to navigate American schools (Zhou, Adefuin, Chung, & Roach, 2000; Zhou & Kim, 2006).

Advantages of using a Social Capital Framework with Immigrant Families

Social capital provides an appropriate framework for exploring immigrant family educational involvement for several reasons. First, two of the hypothesized antecedents to involvement, role construction and self-efficacy, are socially constructed and thus, reactive to changes in families' social context (Hoover-Dempsey & Sandler, 2005). By investigating

educational involvement in conjunction with social networks, it is possible to garner a more comprehensive understanding of what factors underlie families' propensity to be involved in their children's education.

Second, social capital is a particularly useful lens for exploring immigrant family educational involvement because it shifts the focus from an orientation focused exclusively on deficits (e.g., the barriers that immigrant families may face) to an orientation that may also take into account cultural strengths of immigrant families (e.g., close parent-child relationships, tight knit communities). Although immigrant families may experience cultural incongruities with mainstream cultural values upheld by public educational institutions in the United States, the educational disadvantages of living in less-than-optimal communities can be attenuated by families' participation in community groups (Sun, 1999). Moreover, a network containing members that share a common language with the family can be beneficial for immigrants with low proficiency in English because they are able to bypass the language barrier and access information to support their children's educational success.

Third, this type of social capital framework puts an emphasis on home-based involvement, which also attenuates the need for strong English language skills and accentuates the value of family-child interactions, which allow family members to pass on their human capital. A study conducted by Hao and Bornsted-Bruns (1998), for instance, found that frequent parent-child interactions among immigrant families were associated with concordant expectations, which in turn were associated with higher student achievement.

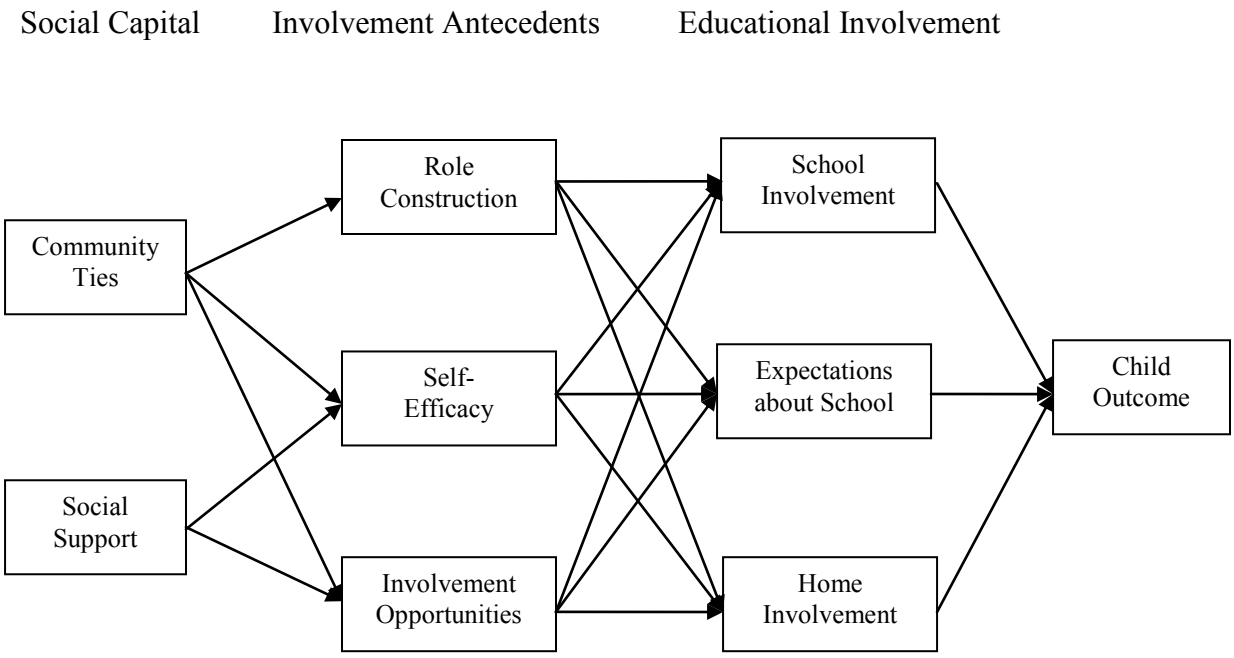
Finally, involvement may function as another opportunity for families to strengthen their social capital; as families participate in involvement activities, they activate (and strengthen) their social networks. Through participation in school-based activities and interaction with

teachers, for example, parents are able to draw more information about their child's progress and be cognizant of the availability of different resources to help their children succeed academically while also reinforcing relationships with school personnel.

Study Objectives

Guided by both general ecological theories of development and specific theory on how and why families become involved in their children's education, this dissertation investigates a conceptual model for immigrant family involvement that involves a three-part sequence of associations linking distal context with child achievement and well being. Specifically, in this model, a series of relations are postulated between social capital, family perceptions and attributions, home- and school-based family educational involvement, and student academic and socio-emotional outcomes. See Figure 1 for a display of the conceptual model guiding the research questions.

Figure 1. Conceptual Model of Research Questions



Following this theoretically-derived model, it is expected that the number of community ties held by the family will be associated with the three involvement antecedents proposed by Hoover-Dempsey and Sandler (1997). Specifically, higher levels of community ties are hypothesized to engender role construction around education that is more aligned with beliefs commonly held in North American schools regarding the appropriate roles of schools and families in educating children. Similarly, higher levels of community ties are hypothesized to predict higher levels of family self-efficacy around education and more perceived opportunities for educational involvement.

In contrast, no direction of association is hypothesized between social support and role construction because high levels of social support can reinforce role construction that is contrary to that of North American schools as well as engender perceptions of educational involvement that are more aligned with those held by the majority of U.S. schools. Similar to community ties, however, higher levels of social support are hypothesized to be linked to higher levels of self-efficacy and more perceived opportunities for educational involvement.

In turn, these three factors are hypothesized to be positively associated with school- and home-based involvement. That is, families are expected to engage in more educational involvement activities when their role construction around education is aligned with that of North American schools, when they have higher levels of self-efficacy, and when they perceive more opportunities for involvement.

Finally, higher levels of school and home involvement activities are expected to be associated with higher levels of achievement, lower levels of problem behaviors, and higher levels of positive behavior.

In sum, this dissertation will address the following research questions:

- Does variation among immigrant families' community ties and social support predict their involvement antecedents (i.e., perceptions and attributes)?
- Does variation among immigrant families in their role constructions, self-efficacy, and opportunities predict variation in school- and home-based family educational involvement?
- Do higher levels of school- and home-based educational involvement predict higher levels of achievement and positive socio-emotional outcomes among children of immigrant families? Relatedly, does immigrant family educational involvement mediate the relationship between social capital and student outcomes?
- After controlling for child and family selection effects that may bias estimates of the importance of social capital and family involvement (i.e., child and family covariates), is there a chain of direct and indirect associations as depicted in Figure 1?
- If there is enough statistical power, is the chain of direct and indirect associations for all immigrant families replicated for Latinos, the largest immigrant subgroup? Similarly, does this chain of associations differ for male vs. female children, low vs. high family educational attainment, or foreign-born vs. native U.S. born children?

Chapter 3: Methods

Data for this study were drawn from the Panel Study of Income Dynamics (PSID), a nationally representative, multi-method analysis of socioeconomics and health across multiple generations. Specifically, data from the Child Development Supplement (CDS), which collected information on a range of developmental outcomes for a subset of PSID children, were used in this study. Included as core measures in the PSID-CDS were indicators of family educational

involvement, family psychological factors, social capital, and child educational and socio-emotional outcomes.

The main interview portion of the PSID collected data from the head of household annually between the years 1968 and 1997, and biennially thereafter. To reflect the new wave of immigrants entering the United States, an immigrant refresher sample was added to the PSID in 1997 to maintain a nationally-representative dataset. Recent immigrants were included in the refresher sample if they immigrated to the U.S. after 1968 and if they were not married to a person who had been in the country since 1968.

PSID families, including families from the immigrant refresher sample, were selected to participate in the CDS in 1997 if they lived in the continental U.S. and had at least 1 child between the ages of 0 and 12. The CDS, which collected additional data relating to a wide range of children's developmental outcomes (e.g., academic, socio-emotional, social relationships), reassessed these families and their children every five years as long as the child remained under age 18. To date, the CDS has three waves of data (1997, 2002/2003, and 2007/2008).

The analytic sample for this dissertation consisted of all school-age children from families added to the PSID in the immigrant refresher sample ($N = 189$) with data in the first wave (1997) of the CDS as it was the only wave with data collected on all the variables of interest. Primary caregivers reported on their school involvement, family activities at home, and educational expectations for the focal child in a home interview. In a household survey mailed to CDS participants, primary caregivers reported on their self-efficacy, role construction around education, barriers to educational involvement, and social networks. Assessments of achievement were completed by students while primary caregivers reported on children's socio-emotional well-being. Response rates ranged from 63 to 100 percent (see Table 1 for additional

information), with household surveys having the lowest response rates (see Hofferth, Davis-Kean, Davis, & Finkelstein, 1997).

Measures

Social capital. Two composite variables were created from items drawn from the household survey to represent the dual dimensions of social capital. The bonding dimension of social capital, social support, was assessed using a set of items measuring the primary caregiver's support network with items replicated from the National Study of Families and Households. Primary caregivers were asked whether they received any practical or emotional help from the other caregiver and other family members (e.g., "In the past month have you received any help with things like child care, transportation, repairs to your home or car, or other kinds of work around the house? Please indicate yes or no.") A total of four items were averaged to represent social support ($\alpha = .69$). See Appendix A for a complete list of items.

The bridging dimension of social capital, community ties, was represented by a count variable indicating the number of community activities (e.g., church, parenting support group, athletic team, community center, neighborhood watch) in which the primary and other caregiver in the household participate. See Appendix A for a complete list of items. These items were drawn from the McArthur Study of Human Development in Chicago Neighborhoods. Primary caregivers reported on a total of 8-items for themselves and the other caregiver. Each item was recoded to a binary variable (i.e., 1=engaged in an activity) so that a summary variable could be created. Given that there was considerable overlap in the responses for the primary and other caregiver, a composite variable was created to represent the highest number of community ties within a primary/other caregiver dyad ($\alpha = .50$).

Antecedents of involvement.

Role construction. Role construction around education was assessed using two items from the Parental Modernity Scale ($r = .40$; Schaefer & Edgerton, 1985) in the household survey, which measures parents' educational attitudes and beliefs. On a 5-point Likert scale ranging from 1 = *strongly agree* to 5 = *strongly disagree*, parents were asked to rate the following two items: 1) "Since most parents lack special training in education, they should not question the teacher's methods," and 2) "Children should always obey the teacher." Higher scores indicate role construction around education that is more in alignment with mainstream U.S. culture of education.

Self-efficacy. Although the CDS does not include a measure of families' self-efficacy that is focused exclusively on educational involvement, families' general self-efficacy was measured using items from the Pearlin Mastery Scale ($\alpha = .78$; Pearlin, Lieberman, Menaghan, & Mullan, 1981) in the household survey, which evaluates the extent to which individuals believe themselves to be in control of significant events that impact their lives (e.g., "I have little control over the things that happen to me."). See Appendix A for a complete list of items. Primary caregivers reported on a total of four items which were rated on a 4-point Likert scale ranging from 1 = *strongly disagree* to 4 = *strongly agree*, summed for a possible score ranging from 4 to 16 where higher scores indicate higher levels of self-efficacy. Although Bandura (1997) notes that it is preferable to use a domain-specific measure of self-efficacy rather than a global one because global measures are likely to be less precise and underestimate the influence of self-efficacy, research has demonstrated that global self-efficacy is correlated with domain-specific self-efficacy and can predict it (Grabowski, Call, & Mortimer, 2001).

Opportunities. The third factor, opportunities for involvement, was represented by a variable indicating the total number of barriers to family educational involvement (e.g., work

schedule, lack of information from school, difficulty understanding assignment) reported by the primary caregiver in the home interview. A total of nine items (α = .64) were recoded to a binary variable (i.e., 1 = posed a problem) so that a summary variable could be created to represent the total number of unique barriers the primary caregiver experienced over the course of the school year. A sample item asks, "How often has your work schedule made it difficult for you to be involved? Would you say not in the current school year, once, or more than once?" See Appendix A for a complete list of items. This summary variable was reverse-coded so that higher values represented fewer barriers and more opportunities for involvement.

Family educational involvement. Three central aspects of educational involvement were assessed using primary caregiver reports.

School-based involvement. Items used to assess school-based involvement were modeled after items in the National Education Longitudinal Survey of 1988 (α = .60; NELS: 88). In the home interview, primary caregivers reported whether they engaged in certain school-based activities within the last 12 months. Sample items include volunteering at school, attending parent-teacher conferences, school events, and meetings with the school counselor. See Appendix A for a complete list of items. Each item was recoded to a binary variable (i.e., 1 = engaged in an activity) so that a summary variable could be created to represent the total number of unique school-based involvement activities the primary caregiver engaged in over the course of the school year. Out of 10 possible involvement activities, families participated in an average of four activities, with the majority of families (~96%) reporting participation in at least one activity.

Home-based involvement. A factor score representing home-based educational involvement activities was created using three different measures drawn from the home

interview. The first measure was a mean of three items drawn from the National Education Longitudinal Study of 1988 that asked primary caregivers to report on their communication about school with their child (e.g., "In the past 12 months, how often have you discussed child's experiences in school?"; $\alpha = .87$). The second measure was drawn from items that were replicated from the National Longitudinal Survey of Youth and National Longitudinal Surveys to indicate the number of unique activities the primary caregiver engaged in with the child in the home ($\alpha = .73$; e.g., "In the past month, how often did you and the child do arts and crafts together?"); similar to school-based involvement activities, each item was recoded into a binary variable (i.e., 1 = engaged in an activity) prior to summation. Out of seven possible home-based involvement activities, families reported engaging in an average of four activities with the vast majority of families (~98%) engaging in at least one activity. The third measure represented cognitive stimulation in the home as assessed by items from the cognitive stimulation subscale of Caldwell and Bradley's (1984) Home Observation for Measurement of the Environment-Short Form (HOME-SF; $\alpha = .53$). Individual items were coded in a binary fashion and then summed by PSID researchers to create a total score of cognitive activities in the home. All three measures loaded highly onto one factor with loadings ranging from .69 to .77; the resulting home-based involvement factor accounted for 51% of the variance in items. Thus, a composite indicator of home involvement was created based on the factor score generated from the principal-component factor method with promax rotation. The resulting factor score was weighted according to factor loadings.

Expectations. Based on factor analyses, schooling expectations did not load well onto the home-based involvement factor as expected. As a result, families' schooling expectations for their child was included as an independent measure of educational involvement. In the home

interview parents responded to the question, "How much schooling do you expect child to complete?" on a scale that ranged from less than high school to a graduate degree. The majority of families (~76%) expected their child to get at least a college degree.

Achievement. The raw scores[2] of four subscales of the Woodcock-Johnson Revised Tests of Achievement (WJ-R; Woodcock & Johnson, 1989) were used at wave 1 (1997) to assess children's achievement in literacy and mathematics. Eight percent of the students (n = 16) were assessed using the Spanish version of the test. The Letter-Word Identification subscale (α = .98), required children to orally identify printed letters and words while the Passage Comprehension subscale (α = .93), asked children to identify a missing keyword that would make sense in the context of a written passage. The two literacy subscales were highly correlated (r = .87). Mathematics ability was assessed using the Applied Problems (α = .95) and Calculations (α = .95) subscales of the WJ-R. The Applied Problems subscale asked children to perform math calculations in response to problems presented orally and visually. The Calculations subscale required children to perform various mathematical calculations to problems that were presented visually. The two mathematics-based subscales were highly correlated as well (r = .83). Using the principal-component factor method with promax rotation, these four subscales were used to create a factor score to represent students' achievement, weighted according to factor loadings. All subscales loaded highly onto one factor with loadings ranging from .89 to .94. The resulting achievement factor score accounted for 84% of the variance in items.

Behavior functioning. Three measures from the CDS home survey were used to assess students' behavioral functioning.

[2] Although it is preferable to use standardized instead of raw scores for the WJ-R subscales due to the high correlation between child age and achievement scores, the PSID-CDS did not have standardized scores available for immigrant students. Furthermore, standardized scores could not be calculated by hand as the correct version of the computer software and manual used to calculate scores were not available. However, residuals from achievement regressed on child age were also estimated as an outcome in separate path analyses.

Behavior problems. The internalizing and externalizing subscales of the Behavior Problems Index scale were developed for the NLSY (BPI; Peterson & Zill, 1986) to assess children's behavior problems. This scale, which is largely based on Achenbach's Child Behaviors Checklist, relies on parental report of child behavior. The BPI has demonstrated high internal reliability, moderate construct validity (Epps, Park Huston, & Ripke, 2003), and is validated for use with a broad developmental range (i.e., children ages 4 -17; Quint, Bos, & Polit, 1997). The internalizing subscale ($\alpha = .82$) used for this set of analyses is a sum score comprised of 14-items while the externalizing subscale ($\alpha = .87$) is a sum score of 17-items where higher values indicate more behavior problems. A factor score based on these subscales was created using the principal-component factor method with promax rotation to represent behavior problems. Both subscales loaded highly onto one factor with loadings equal to .90. The resulting behavior problems factor score accounted for 83% of the variance in items.

Positive behavior. Children's positive behavior was represented by a mean score of ten items drawn from the Positive Behavior Scale (PBS; $\alpha = .79$; Polit, 1998). Child Trends, Inc. created this ten-item scale for the JOBS evaluation to assess behaviors in a population of educationally and economically disadvantaged children and youth. The PBS, which measures children's social competence, obedience/compliance, self-esteem, self-control, and persistence, is based on primary caregiver reports. One child with a score that was more than three standard deviations above the mean had their score top-coded to the next highest value. Children's positive behavior was negatively correlated with behavior problems ($r = -.39$, $p < .05$).

Child and family covariates. To adjust for potential selection effects that may bias estimates of the importance of social capital and family involvement on child outcomes, a set of child and family covariates were included in the present study. Child covariates included age,

grade level, gender, and a dichotomous variable indicating whether the child was born in the United States. Race of the head of household was categorized as White, Asian, Latino, and Black/Other. Additional family covariates included average[3] family educational attainment and household income.

Analytic Approach

Structural equation modeling was used to address the primary questions of interest. Specifically, LISREL 8.8 (Jöreskog & Sörbom, 2006) was used to estimate path models. Path analysis was chosen as the analytic approach because it allows the researcher to determine whether observed variables in the sample data support a model of complex relationships identified a priori while simultaneously estimating all specified pathways of association. Moreover, path analysis allows the researcher to set the direction of associations between measured variables of interest and to simultaneously investigate multiple chains of associations (Weston & Gore, 2007).

The path models in this dissertation were estimated in a series of steps. First, as proposed in the conceptual model, path models were estimated using maximum likelihood[4] (ML) with all child outcomes (i.e., achievement, problem behaviors, and positive behavior) in one model. However, due to poor model fit[5], separate path models were estimated for each child outcome. Second, in conjunction with theoretical and empirical guidelines, LISREL's modification indices were used to add additional pathways. Non-significant pathways were removed to improve

[3] Given that social networks are positively associated with socioeconomic background, average family educational attainment was included in the model instead of families' highest level of educational attainment in an effort to capture the varying degrees of social capital accessible to immigrant families. Although one family member may have a resourceful social network, if the primary caregiver has low English proficiency, for example, then that individual may not be able to access all the resources of the network without the presence of the other family member, thus limiting social capital.

[4] Although ML is robust to moderate violations of the normality assumption (Anderson & Gerbing, 1984), non-normally distributed variables were transformed to adjust for potential problems that may stem from violations of the normality assumption. See Appendix B for more details.

[5] See Appendix C for related output.

model fit and maintain parsimony (i.e., keep the total number of model parameters at a minimum).

As suggested by Hoyle and Panter (1995), multiple indices were used to determine model fit: chi-square (χ^2) and the root mean square error of approximation (RMSEA). Although χ^2 is sensitive to large sample sizes, it is the most commonly reported fit index because of its usefulness in assessing how well the proposed model fits the observed data and comparing nested models (Martens, 2005). RMSEA, on the other hand, is less dependent on sample size but takes model complexity into account giving more favorable RMSEA values to more parsimonious models (Steiger, 1990). Convention states that good model fit occurs when the χ^2 statistic is non-significant and when the RMSEA value is below .06 with an upper-bound confidence interval below .10 (Hu & Bentler, 1999; Weston & Gore, 2006).

In post hoc analyses, multi-group path analyses were estimated to investigate whether key demographic characteristics moderated pathways in the parsimonious models for each child outcome. A number of comparison groups were estimated, including: 1) male vs. female child, 2) native U.S. vs. foreign born child, 3) low vs. high family educational attainment, and 4) Latino immigrants (the largest ethnic group in the analytic sample) vs. non-Latino immigrants.

Given the complexity of the proposed model and the relatively small analytic sample size, a full set of covariates could not be included in the estimation of any of the path models. However, child weights were normalized to the analytic sample and applied to the path analyses to adjust for sampling so that inferences could be made to the population of interest, which includes school children of immigrant families in grades K through 8[6].

[6] Once parsimonious path models were identified, models were re-estimated with the full set of child and family covariates using hierarchical OLS regression as a means to identify robust associations found in the final path models. Prior to estimating hierarchical OLS regression models, missing data were imputed in Stata 11 using

Missing data. There was a moderate to high amount of data missing across variables (range 0% to 54% for individual variables) with the highest percentage of missing evident in data drawn from the household survey. As a result, full-information maximum likelihood (FIML) was used in estimating path models. FIML is the recommended method for dealing with data missing at random (MAR) because it has been demonstrated to produce unbiased parameter estimates and fit indices for SEM models (Widaman, 2006; Schafer & Graham, 2002). FIML does not generate values for missing data, but rather estimates a predicted relationship using available data (Enders & Bandalos, 2001).

Chapter 4: Results

Table 1 displays summary statistics for the variables of interest. Students in the sample ranged from Kindergarten through 8th grade. Forty-six percent of the students were male. The majority of students was born in the United States (66%) and came from immigrant families with Latino roots (68%). Parents' average level of education was ninth grade, and families had relatively low incomes with an average household income around $19,000. Although the vast majority of families (90%) reported speaking a first language other than English, families' English reading ability was quite evenly distributed across the spectrum of reading "very well" to "not at all" with the head of household reporting, on average, "some" level of English reading ability.

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multiple imputations by chained equations to create five complete datasets. Results from the OLS regressions are presented in Appendix E for reference.

Table 1.

Means, Standard Deviations, Ranges, and Percent Missing of the Weighted Variables

Variable	*M(SD)/%*	Min	Max	% Missing
Social Capital				
Community Ties [a]	2.15 (1.38)	0	6	53%
Social Support [a]	0.41 (0.36)	0	1	54%
Involvement Antecedents				
Role Construction [a]	2.21 (0.82)	1	5	55%
Self-Efficacy	2.95 (0.69)	1	4	53%
Opportunities [a]	7.64 (1.56)	1	9	0%
Family Educational Involvement				
School-based Involvement	4.29 (2.09)	0	10	53%
School Expectations [a]	5.89 (1.74)	2	8	2%
Home-based Involvement [b]	-0.01 (0.94)	-2.92	1.95	53%
Child Outcomes				
Achievement [b]	0.02 (1.01)	-2.45	1.89	34%
Behavior Problems [b]	0.13 (0.99)	-1.68	2.63	6%
Positive Behavior [a]	4.49 (0.50)	2	5	0%
Child and Family Covariates				
White	8%	0	1	16%
Black/Other	6%	0	1	16%
Asian	18%	0	1	16%
Latino	68%	0	1	16%
Male Child	46%	0	1	0%
Child Age in Months	112.28 (28.70)	58.90	158	28%
Grade Level	3.56 (2.32)	0	8	0%
Child U.S. Born	66%	0	1	2%
Family Educational Attainment [a]	9.10 (4.39)	0	17	3%
Family English Reading Ability [a]	3.01 (1.53)	0	5	0%
Household Income [a]	18,967 (4,360)	11,063	34,845	10%

[a] The mean and *SD* presented are of the raw score, but the transformed variable was used in the analyses. See Appendix B for transformation type.

[b] The mean and *SD* presented are of the factor score.

Table 2 displays weighted inter-correlations between the main variables of interest and child and family covariates. Patterns provided initial support of links between three of the four

main areas of interest, although the magnitude of those associations were relatively small: social capital, antecedents to involvement, and family educational involvement. Social support was significantly ($p < .05$) correlated with two of the three involvement antecedents, self-efficacy ($r = .26$) and opportunities for involvement ($r = .29$), and home-based involvement ($r = .22$). Similarly, two of the three involvement antecedents, role construction and self-efficacy, were positively correlated with home-based involvement ($r = .22$ and $r = .24$, respectively). Moreover, role construction was significantly correlated with the two child behavior outcomes of interest, behavior problems ($r = .26$) and positive behavior ($r = -.35$). Although home-based and school-based involvement as well as home-based involvement and expectations were significantly related to one another (r = .29 and .24, respectively), none of the family educational involvement variables were significantly correlated with any child outcomes. In fact, other than its association with home-based involvement, school-based involvement was not associated with any other variables in the study.

Child and family covariates demonstrated significant correlations with the primary variables of interest. Families' average levels of educational attainment and English reading ability were consistently and positively correlated with all three involvement antecedents and family educational involvement types. Additionally, several covariates were significantly correlated with home-based educational involvement: families were more likely to participate in home-based educational involvement activities when their child was female ($r = -.19$) and young ($r = -.25$), and when families had higher levels of education ($r = .48$) and English reading ability ($r = .35$). Families with low levels of income were more likely to engage in home-based involvement activities ($r = -.26$) as well.

Race was associated with family characteristics and several of the primary study variables of interest. Black and Asian families were, respectively, slightly and moderately likely to have high levels of educational attainment (r = .18 and r = .35, respectively), though only Asian families were likely to have high English reading ability (r = .23). Latino families, however, were likely to have low levels of English reading ability (r = -.28) and educational attainment (r = -.55). Although Black families were likely to have higher levels of educational attainment, they were also likely to have lower levels of income (r = -.20). Correlations for White families demonstrated that they were likely to have low levels of income (r = -.25) despite having high levels of education (r = .29).

With regards to the four main areas of interest, no significant correlations were evident between race and either measure of social capital. In contrast, two of the three involvement antecedents were significantly associated with race: White and Asian families were likely to have role construction around education in alignment with dominant U.S. culture (r = .25 and r = .27, respectively) while Latino families were likely to report role construction values dissimilar to dominant U.S. culture (r = -.41). Additionally, Latino families were likely to report fewer opportunities for involvement (r = -.22) while Asian families were likely to report more opportunities (r = .23). Latino families also differed from White families with regards to family educational involvement. While White families were likely to have high expectations for their children's educational attainment (r = .17) and to engage in more home-based involvement activities (r = .25), Latino families were likely to report lower educational expectations (r = -.17) and to participate in fewer home-based involvement activities (r = -.31). Lastly, there were few significant correlations evident between race and child outcomes with two exceptions. Black students were likely to have low levels of achievement (r = -.27). Latino students were

likely to display more positive behaviors (r = .32) while Asian students were likely to display fewer positive behaviors (r = -.33).

Table 2.

Weighted Correlations for Study Variables (n = 189)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.
1. Ties	-																				
2. Support	0.23*	-																			
3. Role	0.08	0.19	-																		
4. Self-Efficacy	0.13	0.26*	0.33*	-																	
5. Opportunities	0.00	0.29*	0.08	0.19	-																
6. School Inv	-0.11	0.16	-0.09	-0.02	-0.06	-															
7. Expectations	-0.08	0.07	0.07	0.01	0.10	0.09	-														
8. Home Inv	0.21	0.22*	0.22*	0.24*	0.00	0.29*	0.24*	-													
9. Acad Ach	0.01	-0.03	0.20	0.12	0.06	0.00	0.16	-0.09	-												
10. Behavior Prob	0.09	0.06	0.26*	-0.09	0.05	0.02	0.15	0.08	0.08	-											
11. Pos Behavior	-0.09	-0.10	-0.35*	-0.03	-0.05	0.08	0.01	-0.11	-0.05	-0.38*	-										
12. White	0.10	0.16	0.25*	0.01	0.16	0.09	0.17*	0.25*	0.17	0.10	-0.07	-									
13. Black/Other	0.01	-0.11	0.05	0.01	-0.12	-0.01	-0.02	0.07	-0.27*	-0.16	-0.02	-0.07	-								
14. Asian	-0.15	0.03	0.27*	0.08	0.23*	-0.08	0.10	0.15	0.08	0.07	-0.33*	-0.14	-0.12	-							
15. Latino	0.05	-0.11	-0.41*	-0.08	-0.22*	0.02	-0.17*	-0.31*	-0.05	-0.03	0.32*	-0.43*	-0.37*	-0.68*	-						
16. Male Child	-0.08	0.10	0.09	0.14	-0.10	0.06	-0.13	-0.19*	-0.12	0.07	-0.01	-0.06	-0.06	0.00	0.07	-					
17. Child Age	0.17	-0.11	0.01	-0.07	-0.16	0.02	-0.03	-0.25*	0.83*	0.16	-0.04	-0.01	-0.21*	-0.06	0.15	0.06	-				
18. Grade Level	0.12	-0.09	0.04	-0.04	-0.21*	0.02	0.02	-0.17*	0.79*	-0.02	0.02	-0.06	-0.02	-0.12	0.14	0.01	0.97*	-			
19. Child U.S. Born	0.17	-0.07	0.11	0.23*	0.21*	-0.10	-0.12	0.05	-0.08	-0.04	-0.02	-0.07	0.06	0.07	-0.05	0.04	-0.11	-0.16*	-		
20. Fam Avg Educ	-0.05	0.17	0.36*	0.15	0.19*	0.05	0.26*	0.48*	0.26*	0.06	-0.16*	0.29*	0.18*	0.35*	-0.55*	0.05	0.00	0.03	-0.05	-	
21. Fam Eng Read Ab	0.03	0.11	0.34*	0.41*	0.16*	0.10	0.19*	0.34*	0.28*	0.09	0.10	0.05	0.12	0.23*	-0.28*	-0.10	0.10	0.08	0.13	0.51*	-
22. Income	0.08	-0.10	-0.34*	-0.29*	-0.02	-0.07	-0.12	-0.26*	-0.08	-0.02	0.08	-0.25*	-0.20*	0.12	0.15	0.02	0.06	-0.06	0.05	-0.48*	0.14

*Denotes significant correlations ($p \leq 0.05$)

Path Analyses

Path models were first estimated separately for each child outcome without covariates. Direct paths between social capital, involvement antecedents, family educational involvement, and each outcome of interest were estimated as proposed in the conceptual model (see Figure 1). Results indicated consistently significant pathways from social support to self-efficacy, social support to opportunities for involvement, and role construction to home-based family involvement. Specifically, families with role construction around education that was in alignment with dominant U.S. culture engaged in higher levels of home-based involvement activities. Additional significant pathways were evident in the achievement model; the pathway from role construction to expectations about school and expectations about school to achievement were significant and positive. Table 3 presents unstandardized path estimates for all three child outcomes.

Despite these significant associations, however, fit indices indicated poor overall model fit for both the achievement (χ^2 (*df* = 17) = 54.40, $p < .00$; *RMSEA* = .11, 90% CI = .08 - .14) and behavior problems (χ^2 (*df* =17) = 61.48, $p < .00$; *RMSEA* = .12, 90% CI = .09 - .15) models. Model fit indices for positive behavior were on the cusp of good fit (e.g., *RMSEA* = .06).

Table 3.
Weighted Unstandardized FIML Estimates and Selected Fit Indices for Path Models

	Child Outcomes		
	Achievement *b* (SE)	Behavior Problems *b* (SE)	Positive Behavior *b* (SE)
Paths			
Ties-> Role	0.02 (0.07)	0.02 (0.07)	0.02 (0.07)
Ties->Self	0.10 (0.14)	0.10 (0.14)	0.10 (0.14)
Ties->Opp	-2.97 (4.05)	-3.01 (4.04)	-2.97 (4.04)
Supp->Role	0.17+ (0.10)	0.17 (0.10)	0.16 (0.10)
Supp->Self	0.49* (0.19)	0.49* (0.19)	0.49* (0.19)
Supp->Opp	19.90* (6.23)	19.93* (6.23)	20.01* (6.22)
Role->School	0.86 (0.79)	0.71 (0.82)	0.53 (0.83)

Role->Home	1.02* (0.30)	0.96* (0.30)	0.97* (0.31)
Role->Expect	1.22* (0.58)	1.12+ (0.59)	1.10+ (0.59)
Self->School	0.04 (0.51)	0.08 (0.51)	0.03 (0.50)
Self->Home	0.21+ (0.12)	0.23 (0.12)	0.23+ (0.12)
Self->Expect	-0.07 (0.21)	-0.04 (0.21)	-0.05 (0.21)
Opp->Home	-0.01 (0.00)	-0.01 (0.00)	-0.01 (0.01)
Opp->School	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Opp->Expect	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
School->Outcome	0.02 (0.05)	-0.00 (0.03)	6.76+ (3.60)
Expect->Outcome	0.12* (0.05)	0.08 (0.05)	1.68 (1.50)
Home->Outcome	-0.14 (0.10)	0.06 (0.08)	-17.30+ (9.05)
Select Fit Indices			
χ^2 (*df*)	54.40 (17)	61.48 (17)	26.76 (17)
p-value	<0.00	<0.01	0.06
RMSEA; 90% CI	0.11; (0.08 - 0.14)	0.12; (0.09 - 0.15)	0.06; (0.00 - 0.09)

Note. $\chi 2$ = Chi-Square, *df* = Degrees of Freedom, RMSEA = Root Mean Square Error of Approximation, 90% CI = 90% Confidence Interval
*$p < .05$, + $p < .10$

As a result, in conjunction with theoretical and empirical guidelines, LISREL's modification indices were used to add additional pathways to each model and consistently null pathways were deleted. Three pathways remained significant across these re-estimated models: 1) higher social support predicted higher self-efficacy, 2) higher social support predicted more opportunities for involvement, and 3) higher self-efficacy predicted more home-based involvement. Furthermore, several of the new pathways added to the models were significant and significantly improved model fit to within commonly accepted thresholds for good overall fit. (For resulting improvement in model fit, see fit indices of Models 1 and 2 in Table 4 for Achievement, Table 5 for Behavior Problems, and Table 6 for Positive Behavior.)

Given that no significant pathways from community ties to any of the involvement antecedents were found, community ties was removed from every model for parsimony. The exclusion of community ties drastically improved model fit and, in most cases, strengthened the

pathways from social support to self-efficacy and social support to opportunities for involvement. (See Model 3 in Tables 4, 5, and 6 for changes in path estimates and fit indices.)

Finally, child and family covariates were added in Model 4 for every outcome. Since the analytic sample was relatively small in proportion to the complexity of the model, only pathways from each covariate to child outcome were added. Despite this approach to maximize degrees of freedom, models across all child outcomes had difficulty converging and were unable to produce path estimates when all covariates were included in the model. As a result, covariates were added to the model one by one starting with covariates with strong empirical links to children's achievement, problem behaviors, and positive behavior. Again, models had difficulty producing estimates with the exception of some success with race indicators independently entered to models for achievement and behavior problems. However, even the addition of race alone to the models worsened model fit. See Model 4 in Tables 4 and 5 for changes in path estimates and fit indices.

Table 4.

Weighted Unstandardized FIML Estimates and Selected Fit Indices for Achievement Path Models

	Achievement			
	Model 1 *b* (SE)	Model 2 *b* (SE)	Model 3 *b* (SE)	Model 4 *b* (SE)
Paths				
Ties-> Role	0.02 (0.07)	0.01 (0.06)		
Ties->Self	0.10 (0.14)	0.11 (0.14)		
Ties->Opp	-2.97 (4.05)	-2.89 (4.04)		
Supp->Role	0.17+ (0.10)	0.09 (0.10)	0.10 (0.10)	0.10 (0.10)
Supp->Self	0.49* (0.19)	0.39+ (0.22)	0.44* (0.20)	0.55* (0.18)
Supp->Opp	19.90* (6.23)	20.51* (6.28)	19.40* (5.77)	20.04* (5.76)
Role->School	0.86 (0.79)	-0.56 (0.89)	-0.56 (0.89)	-0.52 (0.88)
Role->Home	1.02* (0.30)	0.50 (0.35)	0.50 (0.35)	0.56 (0.35)
Role->Expect	1.22* (0.58)	0.58 (0.70)	0.58 (0.70)	0.65 (0.71)

Self->School	0.04 (0.51)	-0.17 (0.50)	-0.17 (0.50)	-0.09 (0.50)
Self->Home	0.21+ (0.12)	0.31* (0.13)	0.31* (0.13)	0.28* (0.13)
Self->Expect	-0.07 (0.21)	-0.13 (0.25)	-0.12 (0.25)	-0.05 (0.25)
Opp->Home	-0.01 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Opp->School	-0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)	-0.01 (0.01)
Opp->Expect	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
School->Ach	0.02 (0.05)	0.03 (0.05)	0.03 (0.05)	0.02 (0.05)
Expect->Ach	0.12* (0.05)	0.11* (0.05)	0.11* (0.05)	0.10+ (0.05)
Home->Ach	-0.14 (0.10)	-0.21+ (0.11)	-0.21+ (0.11)	-0.18 (0.12)
Modifications				
Self->Role		0.13* (0.04)	0.13* (0.04)	0.13* (0.04)
Opp->Self		0.01+ (0.00)	0.01+ (0.00)	
Home->School		0.72* (0.20)	0.72* (0.20)	0.71* (0.21)
Expect->Home		0.13* (0.04)	0.13* (0.04)	0.13* (0.04)
Role->Ach		0.80* (0.39)	0.80* (0.39)	
Covariates				
White->Ach				0.69* (0.26)
Select Fit Indices				
χ^2 (*df*)	54.40 (17)	13.55 (12)	6.87 (8)	32.68 (16)
p-value	<0.01	0.33	0.55	<0.01
RMSEA	0.11	0.03	0.00	0.08
90% CI	(0.08 - 0.14)	(0.00 - 0.08)	(0.00 - 0.08)	(0.04 - 0.11)

Note. χ^2 = Chi-Square, *df* = Degrees of Freedom, *RMSEA* = Root Mean Square Error of Approximation, 90% CI = 90% Confidence Interval

* $p < .05$, + $p < .10$

Table 5.

Weighted Unstandardized FIML Estimates and Selected Fit Indices for Behavior Problems Path Models

	Behavior Problems			
	Model 1 *b* (SE)	Model 2 *b* (SE)	Model 3 *b* (SE)	Model 4 *b* (SE)
Paths				
Ties-> Role	0.02 (0.07)	0.00 (0.06)		
Ties->Self	0.10 (0.14)	0.11 (0.14)		
Ties->Opp	-3.01 (4.04)	-2.89 (4.03)		
Supp->Role	0.17 (0.10)	0.10 (0.10)	0.10 (0.10)	0.07 (0.08)
Supp->Self	0.49* (0.19)	0.40+ (0.21)	0.44* (0.20)	0.45* (0.20)
Supp->Opp	19.93* (6.23)	20.80* (6.26)	19.69* (5.75)	18.52* (5.82)
Role->School	0.71 (0.82)	-0.76 (0.88)	-0.76 (0.88)	-0.54 (0.89)
Role->Home	0.96* (0.30)	0.55 (0.34)	0.56 (0.33)	0.70* (0.31)
Role->Expect	1.12+ (0.59)	0.40 (0.66)	0.40 (0.66)	0.18 (0.70)
Self->School	0.08 (0.51)	-0.16 (0.49)	-0.17 (0.49)	-0.22 (0.49)
Self->Home	0.23 (0.12)	0.31* (0.13)	0.31* (0.13)	0.28+ (0.13)
Self->Expect	-0.04 (0.21)	-0.11 (0.26)	-0.10 (0.26)	-0.25 (0.26)
Opp->Home	-0.01 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Opp->School	-0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Opp->Expect	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
School->Beh	-0.00 (0.03)	0.02 (0.04)	0.02 (0.04)	0.01 (0.04)
Expect->Beh	0.08 (0.05)	0.08 (0.05)	0.08 (0.05)	0.08 (0.05)
Home->Beh	0.06 (0.08)	-0.04 (0.10)	-0.04 (0.10)	-0.04 (0.10)
Modifications				
Self->Role		0.13* (0.04)	0.13* (0.04)	0.14* (0.04)
Opp->Self		0.01* (0.00)	0.01 (0.00)	0.01+ (0.00)
Home->School		0.74* (0.21)	0.74* (0.21)	0.74* (0.21)
Expect->Home		0.14* (0.04)	0.14* (0.04)	
Role->Beh		1.05* (0.33)	1.05* (0.33)	0.99* (0.36)
Covariates				
White -> Beh				0.07 (028)
White ->Role				0.21 (0.14)
White-> Self				-0.11 (0.30)
White -> Opp				9.06+ (4.74)
Home-> Expect				0.47* (0.14)
Select Fit Indices				

χ^2 (*df)*	61.48 (17)	17.39 (12)	9.12 (8)	20.13 (11)
p-value	<0.01	0.14	0.33	0.04
RMSEA	0.12	0.05	0.03	0.07
90% CI	(0.09 - 0.15)	(0.00 - 0.10)	(0.00 - 0.09)	(0.01 - 0.11)

Note. Pathways from covariates to variables other than child outcome variables were added based on LISREL's modification indices to improve model fit. χ^2 = Chi-Square, *df* = Degrees of Freedom, *RMSEA* = Root Mean Square Error of Approximation, 90% CI = 90% Confidence Interval

* $p < .05$, + $p < .10$

Table 6.

Weighted Unstandardized FIML Estimates and Selected Fit Indices for Positive Behavior Path Models

	Positive Behavior		
	Model 1 *b* (SE)	Model 2 *b* (SE)	Model 3 *b* (SE)
Paths			
Ties-> Role	0.02 (0.07)	0.00 (0.06)	
Ties->Self	0.10 (0.14)	0.10 (0.14)	
Ties->Opp	-2.97 (4.04)	-3.48 (3.99)	
Supp->Role	0.16 (0.10)	0.10 (0.10)	0.10 (0.10)
Supp->Self	0.49* (0.19)	0.53* (0.19)	0.57* (0.18)
Supp->Opp	20.01* (6.22)	17.40* (6.30)	16.17* (5.84)
Role->School	0.53 (0.83)	-1.00 (0.80)	-0.99 (0.79)
Role->Home	0.97* (0.31)	0.54 (0.31)	0.54 (0.30)
Role->Expect	1.10+ (0.59)	0.48 (0.62)	0.48 (0.62)
Self->School	0.03 (0.50)	-0.18 (0.48)	-0.18 (0.48)
Self->Home	0.23+ (0.12)	0.31* (0.13)	0.31* (0.13)
Self->Expect	-0.05 (0.21)	-0.12 (0.25)	-0.11 (0.25)
Opp->Home	-0.01 (0.01)	-0.00 (0.00)	-0.00 (0.00)
Opp->School	-0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Opp->Expect	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
School->Pos Beh	6.76+ (3.60)	2.72 (2.15)	2.72 (2.15)
Expect->Pos Beh	1.68 (1.50)	1.69 (2.00)	1.71 (2.00)
Home->Pos Beh	-17.30+ (9.05)	-5.53 (4.60)	-5.48 (4.57)
Modifications			
Self->Role		0.15* (0.05)	0.15* (0.05)
Home->School		0.72* (0.21)	0.72* (0.21)
Expect->Home		0.13* (0.04)	0.13* (0.04)
Role->Pos Beh		-69.02+ (34.81)	-69.21*(34.75)
Self->Opp		5.66+ (3.05)	5.44 (3.07)
Covary role and opp		0.08 (0.61)	0.07 (0.61)
Select Fit Indices			
χ^2 (*df)*	26.76 (17)	7.87 (11)	3.80 (7)
p-value	0.06	0.72	0.80
RMSEA	0.06	0.00	0.00
90% CI	(0.00 - 0.09)	(0.00 - 0.06)	(0.00 - 0.06)

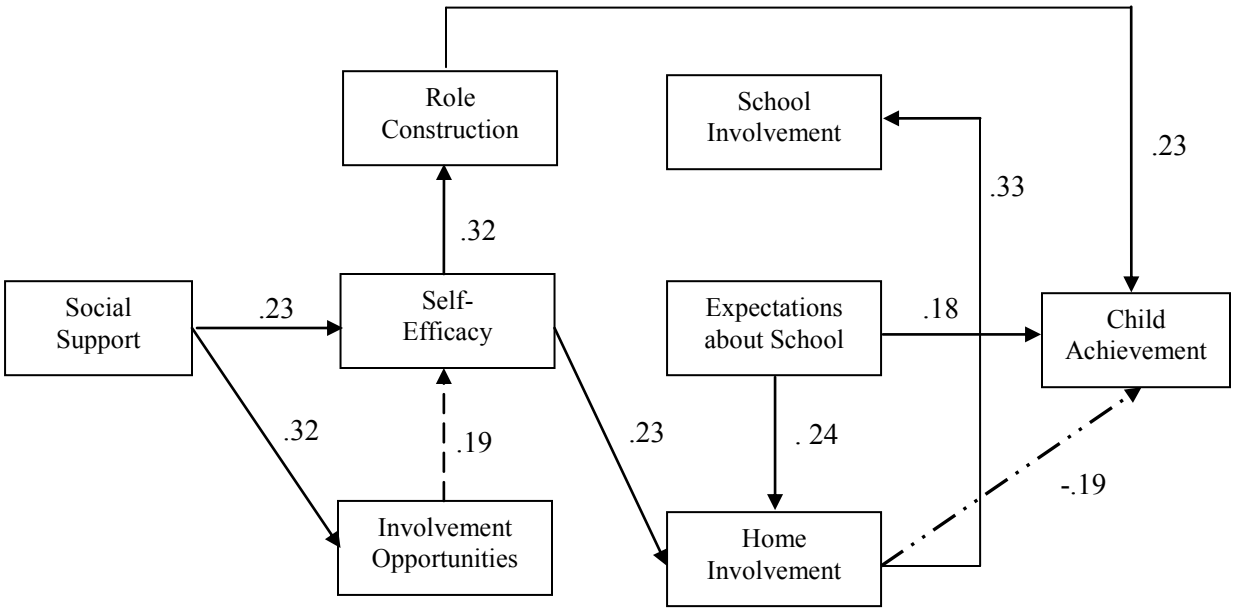
Note. χ^2 = Chi-Square, *df* = Degrees of Freedom, *RMSEA* = Root Mean Square Error of Approximation, 90% CI = 90% Confidence Interval
* $p < .05$, + $p < .10$

Since child and family covariates could not be successfully included in any of the path models, post hoc multi-group path analyses were estimated to determine whether pathways in the best-fitting path models (i.e., Model 3) for each child outcome differed across groups. Specifically, pathways were first constrained to be equal and then unconstrained and allowed to vary across groups. Multi-group path analyses were estimated for key child (i.e., male vs. female; native U.S. born vs. foreign born) and family (i.e., low vs. high family educational attainment; Latino vs. non-Latino) characteristics. Results demonstrated no significant group differences. More specifically, fit indices (i.e., χ^2 and RMSEA) indicated that estimating groups separately and allowing pathways of association to vary across groups worsened model fit, which suggests that pathways likely operate similarly across these groups. See Appendix D for further details on these results.

Figure 2 presents the most parsimonious path model, Model 3 from Table 4, for children's achievement. Model 3 from Table 5 for children's behavior problems and Table 6 for children's positive behavior is presented in Figures 3 and 4, respectively. Standardized path estimates are presented in all figures, with at least three important results evident.

Figure 2.

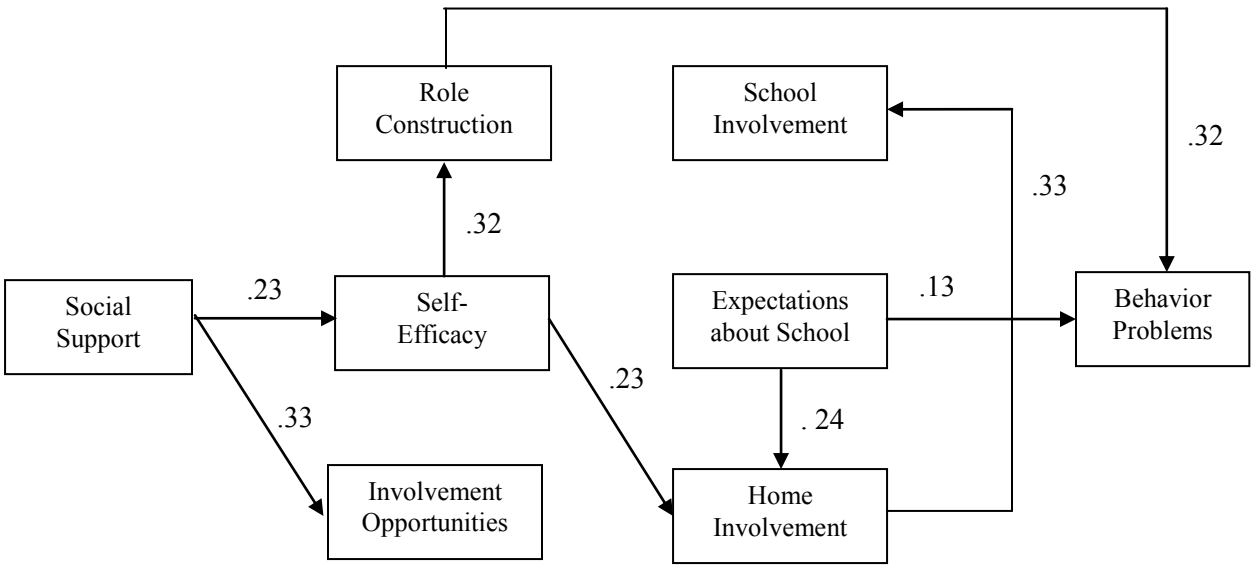
Final Contemporaneous Path Model with Standardized Coefficients for Achievement



χ^2 (8) = 6.87, p = .55, *RMSEA* = .00, 90% CI (.00 – .08)
Note. Solid paths are significant at $p \leq .05$ and dashed line is significant at $p \leq .10$

Figure 3.

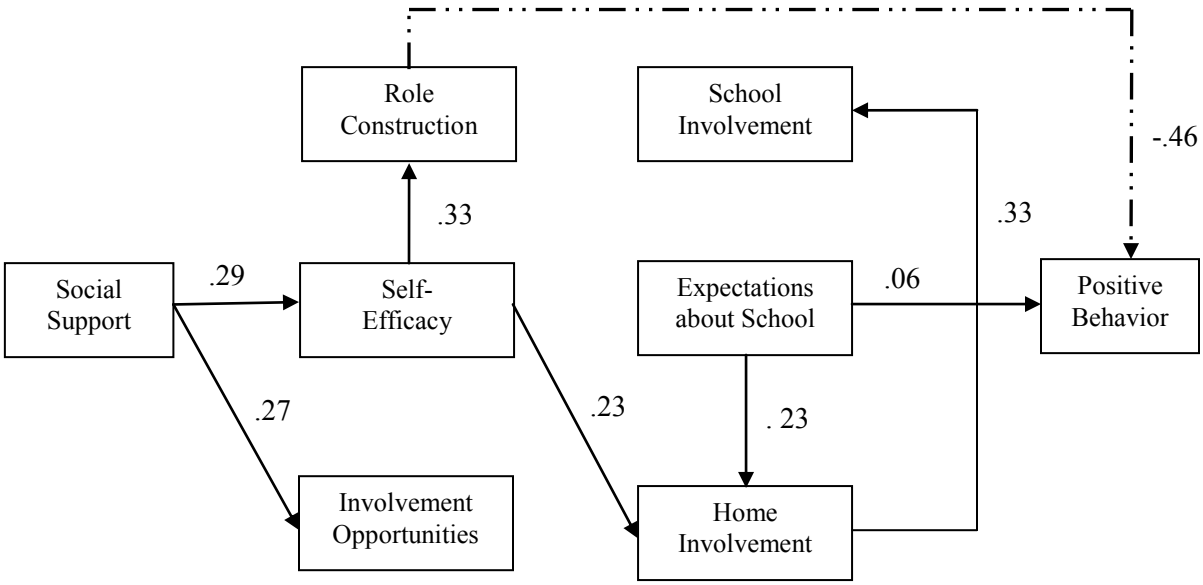
Final Contemporaneous Path Model with Standardized Coefficients for Behavior Problems



χ^2 (8) = 9.12, p = .33, *RMSEA* = .03, 90% CI (.00 – .09)
Note. Solid paths are significant at $p \leq .05$

Figure 4.

Final Contemporaneous Path Model with Standardized Coefficients for Positive Behavior



χ^2 (7) = 3.80, p = .80, *RMSEA* = 0.00, 90% CI (.00 – .06)
Note. Solid paths are significant at $p \leq .05$

First, despite little evidence of the full three-step meditational chain of associations that was proposed, there were significant findings linking adjacent domains to one another that were consistent across all three models with effect sizes ranging from small (e.g., β = .06) to moderately large (e.g., β = - .46): 1) social support → self-efficacy → role construction → child outcome, and 2) social support → self-efficacy → home-based involvement → school-based involvement. Social support was positively associated with families' self-efficacy and perception of involvement opportunities; a one standard deviation increase in social support was associated with a .23 to .29 standard deviation increase in self-efficacy. Self-efficacy, in turn, was positively associated with home-based educational involvement. Specifically, a one standard deviation increase in self-efficacy was associated with a .23 standard deviation increase in home-based involvement activities. Family expectations about the child's educational attainment were

also positively associated with all child outcomes, although the magnitude of association was much smaller than any other significant pathway in the model. A one standard deviation increase in family expectations was associated with a .18 standard deviation increase in achievement, a .13 standard deviation increase in behavior problems, and a .06 increase in positive behavior.

Additionally, associations within two primary areas of interest were also significant across models. Within the domain of involvement antecedents, self-efficacy was positively associated with role construction. Specifically, families with high levels of self-efficacy were likely to have role construction around education that was in alignment with dominant U.S. culture. Within the domain of family educational involvement, families with high expectations regarding the child's educational attainment were likely to participate in more home-based involvement activities, and in turn, more school-based involvement activities. Specifically, a one standard deviation increase in family expectations was associated with a .23 to .24 standard deviation increase in home-based involvement, while a one standard deviation increase in home-based involvement was associated with a .33 standard deviation increase in school-based involvement. School- based involvement, however, was not significantly associated with any child outcomes.

Second, despite the similarity in significant pathways across all three models, the achievement model differed from the two behavior outcome models in several ways. Within the involvement antecedent domain, families' perceptions of involvement opportunities were positively associated with families' levels of self-efficacy at the trend level ($\beta = .19$, $p \leq .10$); this association was not evident in either of the behavior models. Also, there was a significant, but negative, pathway of association between home-based educational involvement and achievement ($\beta = -.19$, $p \leq .10$) in the achievement model that was not evident in the other two models.

Moreover, although, all three models had a significant direct pathway from role construction to child outcome, the substantive interpretation of the pathways differed in that children from families with role construction in alignment with dominant U.S. culture were likely to have high levels of achievement, yet also were likely to have high levels of behavior problems and low levels of positive behavior. Associations with achievement, however, should be interpreted with caution because child age could not be controlled for in the path models[7].

Third, although the hypothesized three-step meditational chain of associations was not fully evident for the behavior outcomes – home involvement, the involvement indicator associated with social capital and antecedents was not associated with any outcome or expectations, and the involvement indicator associated with outcomes (educational expectations) was not associated with social capital or the antecedents – results for achievement indicated a three-step chain of associations (i.e., social support → self-efficacy → home-based involvement → achievement). However, the direction of association between home-based involvement and achievement was in a direction opposite to expectations.

Chapter 5: Discussion

In the past few decades, the demographic landscape of the United States has undergone a dramatic change due to a rapid influx of immigrants often in search of a better life for themselves and their children. Although there is great diversity among these families, many arrive with little education and limited English proficiency, both of which place their children at risk for poor developmental outcomes. Nonetheless, most also bring high expectations for their children's success and cultural strengths that promote child and family well-being (Suárez-Orozco, Suárez-Orozco, & Todorva, 2008). Given that children from immigrant families comprise a large

[7] Additional models estimated using residuals from achievement regressed on child age demonstrated a similar pattern of results with no substantive differences from those presented. See Appendix E for results.

proportion of schoolchildren in the United States, it is critical to understand how to promote their educational success and well-being. One strategy that has been identified as a particularly beneficial practice for the educational outcomes of children with "at-risk" backgrounds is family educational involvement (Fan & Chen, 2001; Jeynes, 2007; Dearing et al., 2004; 2006; Tang, Dearing & Weiss, 2012).

With a selective focus on immigrant children and their families, the goal of this dissertation was to garner empirical support for a theoretically-based model that links social capital with involvement antecedents, family educational involvement, and student outcomes. Specifically, this dissertation was motivated by a strength-based approach in understanding how different forms of social capital are linked to factors that motivate families to be involved (e.g., role construction, self-efficacy, and opportunities for involvement), which have been theoretically linked to families' participation in educational involvement activities, and in turn, found to predict students' educational outcomes. A three-step chain of associations was hypothesized where immigrant families with higher levels of social capital were expected to be more inclined to participate in education involvement activities due to a role construction around education in alignment with the dominant culture in the U.S., higher levels of self-efficacy, and fewer barriers to educational involvement. In turn, based on prior research, higher levels of involvement at school and home were expected to be associated with higher student achievement and better behavior outcomes.

Although results from the present study did not fully support this proposed three-step model of educational involvement among immigrant families, there were several robust findings, including evidence of a truncated version of the proposed chain of associations. First, social support was positively associated with two involvement antecedents, namely self-efficacy and

opportunities for involvement. Second, self-efficacy was associated with family educational involvement, in that higher levels of self-efficacy were associated with higher levels of home-based involvement, which in turn, was associated with lower achievement. Third, role construction around education was significantly associated with every child outcome, but the direction of association with child behavior problems and positive behavior was contrary to expectations. Lastly, school-based educational involvement was not predicted by any of the involvement antecedents nor did it predict any child outcome. The implications of these significant and null findings are discussed for developmental science, practice, and policy with a particular emphasis on the value of these findings for understanding family educational involvement among immigrant families. In addition, suggestions for future directions in research are discussed.

Two-step Chain of Associations: A Revised Model of Involvement for Immigrant Families?

A robust two-step chain of associations was evident across all three child outcome models. Results demonstrated that for immigrant families, social support was positively associated with two involvement antecedents, self-efficacy, and opportunities for involvement. When immigrant families had high levels of social support (i.e., when they receive high levels of emotional support and practical help), they were likely to feel more confident about themselves and their ability to control events in their life. Additionally, families with higher levels of social support were likely to perceive fewer barriers to being involved in their children's education. In turn, families who had high levels of self-efficacy were also likely to engage in more home-based involvement activities; immigrant families participated in more educational involvement activities within the home when they felt confident about their ability to engender positive

outcomes for their children. Finally, immigrant families who engaged in higher levels of home-based involvement were also likely to engage in higher levels of school-based involvement.

This chain of associations is important for two main reasons: 1) it provides some initial empirical evidence for Hoover-Dempsey and Sandler's (1997) theoretical model of what motivates families to be involved in their children's education, which emphasizes the importance of psychosocial factors for family educational involvement, and 2) it pinpoints potentially critical areas for interventions to target to increase immigrant families' educational involvement. Based on the demonstrated chain of associations, increasing families' social support and feelings of self-efficacy appear to be key intervention points for increasing immigrant families' participation in their children's education. In the following sections, each component of the chain will be discussed in further detail. In addition, the meaningfulness of this chain will be discussed in the context of the fact that high involvement did not appear to promote achievement, reduce negative behavior, or increase positive behavior for these children,

Social Capital

One unique aspect of this dissertation was the emphasis on differentiating between two features of social capital and their relationship with factors theorized to influence families' proclivity for educational involvement. Results suggest that the bridging and bonding components of social capital have divergent relations with immigrant families' role construction around education, level of self-efficacy, and perception of opportunities for involvement.

Social support. The bonding aspect of social capital was predicted consistently across models and positively associated with families' level of self-efficacy and perception of opportunities for involvement. Indeed, the standardized path coefficients for these relations were among the largest relative to the other significant paths in the models. These findings are

consistent with theory suggesting that social support may be particularly beneficial for low-income families because it can buffer the negative effects of economic hardship (McLoyd, 1998). Parents who are better equipped to deal with negative stressors when they have friends and family who can provide practical (i.e., child care, transportation) and emotional support (i.e., sympathy, encouragement) feel more confident about their parenting abilities and have more time and energy (i.e., opportunities) to engage in educational involvement activities. Indeed, these findings mirror work suggesting that families with higher levels of social support feel more efficacious as parents (Izzo, Weiss, Shanahan, & Rodriguez-Brown, 2000) and exhibit more positive parenting practices (Colletta, 1981; McLoyd, 1990). Thus, social support seems to be an asset for immigrant families.

Contrary to expectations that social network ties may help build families' human capital and, in turn, improve child development (Bourdieu, 1986; Coleman, 1988; Granovetter, 1973; Yoshikawa, 2011), the bridging dimension of social capital, community ties, was unrelated to any of the three involvement antecedents for immigrant families. These null findings may be related to the fact that only network size was represented in this study. Some social network researchers suggest that when investigating community ties it is useful to consider the quality (i.e., benefits conferred by ties) in addition to the quantity of ties because a large network does not necessarily equate with a more beneficial network as some network members have access to more resources while others may impart stress and time demands that are burdensome to the individual and outweigh any potential advantages garnered from the relationship (Belle, 1982; Lincoln, 2000). Some families, for example have reported worrying about the reciprocity of the relationships and having to repay debts (Antonucci & Jackson, 1990).

Moreover, social capital is generally positively associated with family socioeconomic status where families with higher levels of education and income are likely to have access to more advantageous networks (e.g., ties developed through employment) that provide valuable benefits to their network members (Fischer, 1982). Given that the families in this study had relatively low levels of income and education (78% had the educational attainment level of a high school degree), and immigrant families are likely to be poor and to live in high-poverty, low-resource communities (Portes & Zhou, 1993; Jargowsky, 2006), the immigrant families in this study may not have had access to ties with the means or resources to confer benefits related to family involvement antecedents.

Furthermore, in some cases community ties may even suppress families' motivation to participate in educational involvement activities by reinforcing families' native cultural ideas around education and unintentionally reducing families' levels of self-efficacy and perceived opportunities for involvement. Immigrant families often migrate to areas where there are other families from their country of origin due to pre-existing social ties (Portes & Rumbaut, 1996). As a result, families living in ethnic enclaves with other recent immigrants may receive messages that reinforce indigenous perceptions about families' roles in their children's education that may counter the role construction around education advocated by schools in the U.S.

Additionally, qualitative studies with low-income immigrant families indicate that some families may feel discouraged from going into schools and interacting with teachers because of other families' negative experiences with school staff due to discrimination or uninviting school environments (Delgado-Gaitan, 1992). It is possible that immigrant families with extensive community ties may be more likely to hear about discouraging experiences and may be more hesitant to engage with teachers and schools for fear that they do not have the adequate

knowledge or skills to effectively communicate with school staff due to factors such as low English proficiency, low levels of educational attainment, and/or unfamiliarity with the culture of North American schools (Ramirez, 2003; Valdés, 1996).

Implications for intervention and practice? Taken together, the findings from this analysis suggest that the most pertinent aspect of social capital in relation to families' motivation for educational involvement rests in how much social support (i.e., emotional support and practical help) families receive. As such, schools should help immigrant families to create supportive relationships with other families in the school. A family mentoring program that matches more experienced immigrant or ethnic-minority families with newcomer families may be particularly helpful. That is, the family of an older student who has been in the school or community for a longer period of time would be able to give practical support through sharing advice on navigating the school system while also providing emotional support through drawing on their own experiences and difficulties when their children first started at the school. Moreover, matching families who speak the same language and share similar cultural perspectives can be particularly helpful in helping newcomer families to feel welcome and adjust to the school's culture.

An analogous type of intervention was implemented at an all male Catholic high school in Chicago where mothers of senior boys were paired with mothers of incoming freshmen. At the end of the year, families who participated in the mentoring program engaged in more school-based involvement activities and their children had fewer school absences and higher freshman grades (Ramirez, 2003). Interventions that facilitate immigrant families to build supportive relationships not only give them the opportunity to share information and concerns with others, but also to have their experiences and frustrations validated. Additionally, these supportive

relationships can help immigrant families to build confidence in their ability to be involved in a way that allows them to best promote their children's educational success.

Involvement Antecedents

Despite prior empirical evidence linking involvement antecedents to family educational involvement (Green, Walker, Hoover-Dempsey, & Sandler, 2007), results from the present study with immigrant families provided limited empirical support for Hoover-Dempsey and Sandler's (1997) theoretical model. Similar to findings from Green and colleagues' (2007) empirical study, self-efficacy was positively associated with home-based involvement. However, no other involvement antecedents were, in fact, predictive of educational involvement, and none of the expected antecedents were associated with families' participation in school-based involvement activities.

Self-efficacy. In contrast to prior research with native-born families, no significant links were evident between self-efficacy and school-based involvement (Green, et al., 2007). One possible explanation for the lack of association may be due to the fact that in this study families' general self-efficacy was assessed rather than education-related self-efficacy. According to Bandura (1989), families may refrain from engaging in certain domains if they feel that they are not equipped to bring about positive results. Thus, families may have high overall self-efficacy (e.g., as parents), but their confidence in relation to their ability to help their child succeed educationally through participation in school-based activities may be low due to factors such as low English proficiency or unfamiliarity with the culture of schools in the U.S.

This logic may also help explain why self-efficacy was positively associated with home-based involvement. Immigrant families are likely to feel more comfortable and confident about engaging in a variety of activities with their child in the home than in the school because home-

based activities do not necessarily require knowledge of unfamiliar cultural scripts or strong English language skills, which would likely be the case for school-based involvement. Although some families may still encounter some difficulties engaging in home-based involvement activities (e.g., difficulty in understanding the child's homework), they are more likely to continue expending effort and persisting in those activities in face of adversity because the home is considered the domain of the family and their belief that they can engender positive child outcomes is likely to be higher for activities within the home than at school (Bandura, 1989; Delgado-Gaitan, 1992).

An alternative explanation for why self-efficacy was only related to home-based rather than school-based involvement may be attributable to immigrant families' beliefs about the value of participation in certain activities. Some scholars found that immigrant families were less likely than native-born White families to engage in certain school-based activities, such as attending a PTA meeting, because they did not perceive the activity to be directly related to their child's educational success or as a means to create a better relationship with teachers (Hill & Torres, 2010; Weiss & Edwards, 1992). However, they were just as likely if not more likely to attend parent-teacher conferences (Kao & Turney, 2009). As such, when immigrant families have high levels of self-efficacy, they may be more inclined to engage in more home-based involvement activities (e.g., book reading, helping with homework) because they not only believe they have the ability to enact positive educational outcomes but also because they may view home-based activities as more pertinent to their children's educational success than the opportunities for school-based involvement that are provided to them. Relatedly, families may engage in more home-based activities in comparison to school-based activities when they have high levels of self-efficacy because the home is considered the domain of the family while the school is seen as

the domain of the teacher. Thus, it is possible that role construction rather than self-efficacy was the driving force for this pattern of association.

Role construction. Indeed, higher levels of self-efficacy were also associated with families having a role construction around education that was more in alignment with the dominant White, middle-class culture of the U.S. In general, the dominant culture in the United States revolves around the ideas of independence and self-reliance. The U.S. is viewed as the "land of opportunity" and equality where anyone can be successful as long as they work hard. Thus, a central aspect of these cultural beliefs embodies an orientation that emphasizes the influential role of personal agency in determining one's fate. As such, it seems logical that high levels of self-efficacy (i.e., confidence in one's ability to produce positive outcomes) coincided with a more "Americanized" role construction around education, which emphasizes child and parent assertiveness and a more egalitarian orientation in interactions with teachers.

Although role construction was not significantly associated with any domain of family educational involvement, it was robustly associated with all child outcomes. Children from families with a role construction around education in alignment with the dominant U.S. culture demonstrated higher achievement. This association was expected based on the concept of family-school synchrony; when there is congruence between environments, children are more likely to internalize behaviors and skills because similar messages are reinforced across contexts (Hill & Taylor, 2004). Thus, when immigrant families ascribe to a role construction around education that is consistent with the values upheld by schools in the U.S., they are likely to orient their children in a way that will cultivate skills and attitudes about school that are likely to lead to positive achievement outcomes.

In contrast to expectations, however, immigrant families with a role construction in alignment with U.S. schools were associated with children exhibiting more behavior problems and less positive behaviors. These findings are at odds with theory that purports that a match between values at home and school should be associated with more positive outcomes. Moreover, some literature indicates that immigrant children tend to have better psychological well-being in comparison to their native-born counterparts despite having to deal with the stresses of the migration process such as learning a new language and customs of a new country (e.g., immigrant paradox; e.g., Kao, 1999). Researchers have attributed the resilience of immigrant children to the cultural strengths of their families which include strong social/family ties, high levels of family monitoring, and high expectations and optimism for their children's success (Suárez-Orozco et al., 2008).

Accordingly, some researchers have attributed the lower socio-emotional well-being of second-generation immigrants to a deterioration of the protective relational processes occurring within the immigrant family (Harker, 2001; Zhou & Bankston, 1994). That is, as immigrant families become more assimilated and take on the values and attitudes of the dominant culture in the U.S., the protection of family ties and community ties on children's well-being lessen (Denner, Kirby, Coyle, & Brindis, 2001; Fuligni, Tseng, & Lam, 1999). Families convey these new values and attitudes to their children through their parenting and interactions with their children. And, as children from immigrant families start to adapt to the dominant cultural norms of the U.S., they may start identifying more with their native-born counterparts who exhibit lower academic engagement and higher behavior problems due to an oppositional orientation contending that hard work does not pay off because of racism and discrimination (North, 2009; Ogbu, 1989).

Researchers have found that ethnic-minority children from immigrant families exhibit more positive academic and behavioral outcomes when they are able to retain their ethnic identity and cultural ties (Gibson, 1999; Olneck, 1995; Zhou & Bankston, 1998). In particular, when immigrant families encourage their children to take pride in their native cultural background and when families create opportunities for their children to participate in cultural clubs or language classes, children are able to maintain a connection to their native culture. In turn, this connection to their native culture may buffer children from ascribing to the oppositional attitude about education and negative behaviors often demonstrated by their low-income, ethnic-minority counterparts with native-born parents.

A second explanation for the unexpected link between role construction and child behavior findings is that families' role construction may change depending on the specific domain in question. Traditional Mexican immigrants believe that education can be categorized into academic education, which lies within the domain of the school, and moral education, which lies within the domain of the home (Delgado-Gaitan, 1992). It is possible that the role construction measure only captured families' beliefs about appropriate interactions within the domain of the school and not within the home.

In actuality, families are likely to have different conceptions regarding what child behaviors are acceptable within the home versus school context. For example, families may ascribe to the notion that to succeed academically in U.S. schools it is necessary for children to embody the American spirit and be independent thinkers and proactive about their learning which includes questioning teachers and not accepting everything that they say without thought. However, immigrant families may feel differently when their child exhibits those very same behaviors and attitude within the home. In fact, the majority of recent immigrants (e.g., Latinos

and Asians) come from cultures that promote a more authoritarian style of parenting where there is a clear hierarchical ranking and cultural script that promotes the idea that parents should be respected and obeyed without exception by their children (Steinberg, Dornbush, & Brown, 1991). Thus, when children begin to debate and question their parents in the home as they do with their teachers at school, parents may feel that their children are acting disrespectfully, which in turn, could lead to strained family relationships and to families reporting more negative child behaviors.

Finally, it is important to consider the possibility of a reciprocal relationship between role construction and children's poor behavior outcomes. When children exhibit poor behavior, teachers may be more likely to reach out to their families. As a result of interactions with teachers, families may begin to adopt a role construction around education that is more in alignment with the dominant culture of the U.S. Indeed, literature supports the notion that families' role construction around education can change as they acquire more information about school expectations (Chrispeels & Rivero, 2000).

Implications. Given that self-efficacy appeared to be the most salient involvement antecedent factor -- positively associated with home-based involvement and a role construction around education aligned with the dominant culture in the U.S. -- self-efficacy seems a useful target for education reform policies concerned with promoting immigrant children's achievement. In particular, interventions that target the contexts and factors in the lives of immigrant families may be most helpful in promoting their self-efficacy.

Policy or intervention programs, for example, should contain some elements that are geared toward helping immigrant families to strengthen their English language skills so that they can feel more comfortable and be more adept at communicating not only with school personnel

but also with people they interact with in daily life (e.g., bank tellers, medical doctors). When families gain proficiency in English, they are likely to experience gains in self-efficacy because they can effectively communicate with others and advocate for their children. Moreover, English proficiency also leads to job opportunities with a better work schedule and better pay (Kossoudji, 1988), which allows families more opportunities to be involved educationally. In the meantime, schools should make it as easy as possible for families to communicate with teachers and school staff. As such, schools should have translators available at events so that immigrant families with low-English proficiency can feel welcome and have enough confidence to communicate with school staff about their children's education.

Similarly, intervention programs can also provide immigrant families with low levels of education the opportunity to take adult education classes (e.g., parenting class, GED certification class) so that families can feel confident that they have the skills to effectively help their children with their schoolwork. Additionally, these classes can help familiarize immigrant families to the structure and culture of schools in the United States. Alternatively, a less resource intensive approach to increasing newcomer families' self-efficacy via increasing their knowledge and comfort with the school system in the U.S. is for schools to provide an orientation program tailored to immigrant families explicitly explaining the culture of the school and detailing how families can best contact school staff and navigate the school system.

In consideration of these suggestions for increasing families' self-efficacy, it is also important to consider the repercussions of these programs on how they might influence families' role construction around education. As findings from this study demonstrate, families with a role construction around education in alignment with dominant U.S. culture are also likely to have children who exhibit more behavior problems and fewer positive behaviors. As such, the

emphasis on acculturating immigrant parents to ascribe to a role construction that is more aligned with the dominant culture in the U.S. may be problematic and this strategy should be reconsidered. While it may be associated with positive achievement, initial evidence suggests that this strategy may not lead to child wellbeing in all domains. Given that extant literature suggests that these behavior problems may stem from feelings of detachment that children experience from their families' cultural roots, it is important that interventions and policy changes aimed at increasing families' educational involvement do so with an understanding of families' cultural viewpoints so that information and skills are conveyed in a way that is culturally sensitive and does not devalue families' cultural origins (Henderson & Mapp, 2002). If immigrant families are made to feel that their culture is valued, they are likely to convey those elements to their children, which will allow them to retain a connection with their native culture.

Family Educational Involvement and Links to Child Outcomes

In general, there were very few associations between family educational involvement and child outcomes with the exception of a small but consistent association with families' educational expectations that was found across models.

Home-based educational involvement. Prior literature on home-based involvement demonstrate mixed associations with child achievement, which may be in part due to the wide range of activities that families can engage in to support their child's education that are classified as home-based involvement. In this study, immigrant families' home-based involvement was negatively associated with child achievement, which can be interpreted in two ways. One potential explanation relates to the quality of involvement. That is, immigrant families may be undermining children's achievement when they engage in home-based involvement activities because they are teaching skills in a way that counters how it is taught in the classroom or in a

way that is emotionally frustrating and fosters a negative attitude towards education (Cooper, Lindsay & Nye, 2000). Pomerantz and colleagues (2007), for example, found that involvement is most beneficial when it is characterized by positive affect whereas involvement characterized by negative affect can be detrimental to children's outcomes.

An alternate explanation for the negative association is that families are responding to children's low achievement by increasing their educational involvement at home. Family involvement at home, for example, may be prompted by the teacher reaching out to families to elicit their help in monitoring the child's school work and helping with homework. In some cases the child may initiate families' involvement at home. Hill and Tyson's meta-analysis (2009) provide support for both of these explanations; they found that families who participate in home-based involvement by creating educationally stimulating and supportive home environments are associated with positive achievement while families who engage in home-based involvement via homework help are generally associated with negative child achievement.

Implications. Although the present study is unable to determine the reason behind the negative association between home-based involvement and student achievement, what is clear from the chain of associations (i.e., higher levels of self-efficacy predict higher levels of home-based involvement, which in turn, predict higher levels of school-based involvement) is the importance of immigrant families' educational involvement at home. Accordingly, it is necessary to consider how to promote immigrant families' home-based involvement so that it leads to positive educational outcomes. In fact, several aspects of family involvement in the home have been identified to be associated with positive child outcomes: alignment between content and skills taught at home and school, provision of developmentally appropriate materials and

instruction, and presence of positive affect during family-child interactions around education (Pomerantz, Moorman, & Litwack, 2007).

Alignment between the home and school, for example, can be created through workshops that inform families of school curriculum and learning programs at the beginning of the school year. Through these workshops immigrant families who are unfamiliar with U.S. schools can gain knowledge on the type of skills and content area children are expected to master that year, which in turn, will help families to structure the home learning environment and orient their home-based involvement activities in a developmentally appropriate manner. In addition, schools can provide families with appropriate materials to use within the home. Most importantly, though, they should demonstrate how to use those materials in stimulating and developmentally-appropriate activities that help link school content to home activities. This may include helping families to assess their child's progress and to tailor instruction and activities to match their child's individual needs. In fact, studies find that families are likely to be involved at home when they acquire knowledge that assists them with parenting and facilitates interactions on learning at home (Sanders, Epstein, & Connors-Tadros, 1999). Moreover, teaching families these types of skills has been demonstrated to be beneficial for the achievement of children in Title I schools (Shaver & Walls, 1998), which immigrant children are likely to attend.

Additionally, home-based educational involvement is theorized to lead to optimal child outcomes when there is an open line of communication (Henderson & Mapp, 2002). That is, teachers and school staff should be in frequent contact with families to update them on their children's progress. Contact should occur when children are having problems *and* when they are doing well. Not only do frequent progress updates help families to adjust their home-based involvement activities, but it also helps engender positive feelings between teachers and families,

which may enhance their partnership (Hoover-Dempsey & Sandler, 1997). Moreover, when families are aware of their child's abilities their educational expectations become more realistic, which in turn, has been demonstrated to lead to better child educational outcomes (Hao, & Bonstead-Bruns, 1998).

Finally, schools and intervention programs should stress the importance of maintaining a positive (i.e., fun and loving) affect around educational activities. Although families may not have the content knowledge to help their children with their homework, for example, they can positively influence their children's educational outcomes by modeling a positive attitude about schoolwork and communicating their belief in the child's ability, which in turn, are linked to higher achievement and better behavioral outcomes (Hoover-Dempsey & Sandler, 1995; Pomerantz, Moorman, & Litwack, 2007). Furthermore, researchers have found that even when families are not directly assisting with homework, children's motivation increases as long as families maintain a positive affect; this pattern was particularly true for those children who demonstrated high levels of helplessness (Pomerantz, Wang, Ng, 2005).

School-based educational involvement. Families' school-based involvement was not associated with any of the child outcomes. This null finding was surprising given the robust literature in the field linking families' school-based involvement to higher student achievement and better behavioral outcomes across ethnicities (Fan & Chen, 2001; Jeynes, 2005). Moreover, given the null findings between opportunities for involvement and school-based involvement, it seems that practical factors (i.e., work schedules, transportation) are not the primary deterrent. Rather, what may be explaining the lack of association between involvement antecedents and immigrant families' participation in schools may be due to more relational-based factors, such as school climate and the reception of immigrant families by school staff. That is, the

consequences of school-based involvement may be moderated by the family-school fit, which may be less than optimal for many immigrant families. Namely, the value of school-based involvement may be moderated by how welcoming the school is in emotional and practical ways (e.g., language of the teacher; Tang et al., 2012).

In fact, many low-income and ethnic-minority immigrant families find the school climate to be intimidating and unwelcoming. Families have reported feeling uncomfortable and disrespected due to teachers' judgmental attitudes and style of communication (i.e., they often feel that teachers talk down to them; Peña, 2000). Furthermore, families noted that some teachers thought that all Latino students were from Mexico and did not even know where other Latin American countries were located or were even aware of the civil war in their native country (Ramirez, 2003). This type of disrespect and lack of effort in getting to know students and their families' backgrounds creates an unwelcoming school climate that gives families little motivation to participate in activities at school (Trueba, 1998). Moreover, given the research indicating that maintenance of cultural ties is important for children's educational and behavioral well-being and the current negative sociopolitical sentiments around immigrants, it is important for schools to cultivate families' participation in school activities and integrate their cultural perspectives to help children to feel connected to and proud of their cultural origins.

A first step in creating a more inviting school climate is for educators to learn how to effectively communicate and interact with immigrant families. Schools need to train teachers and school staff on best practices for communicating with immigrant families from different cultural groups. The training should also include information on the diverse cultural backgrounds of the immigrant families attending their school.

Secondly, although teachers may value families' involvement, they may not have the knowledge or the time to effectively engage families or plan activities that can integrate their cultural perspectives and knowledge. In some cases, due to the limited resources and time constraints on teachers, some may view the extra work for getting immigrant families involved as a burden (Peña, 2000). As a result, schools need to allocate time for teachers to not only extend invitations to families to be involved, but also to organize activities that can include immigrant families.

One method for helping teachers and schools to become acquainted with families and to elicit their participation is to find ways to incorporate their "funds of knowledge" (Molls & Greenberg, 1990) into classroom lessons. That is, due to their cultural background, history, and unique experiences, immigrant families have knowledge that span across a variety of subjects and can place school lessons into a more practical context. This type of strategy not only helps teachers to enhance their relationship with their students' families, but also helps children from immigrant families to stay connected to their cultural origins.

Study Limitations

Although this study provides an initial window into factors that may influence immigrant families' educational involvement and children's outcomes, it is important to consider these findings in light of the study's limitations. First, cross-sectional data on variables collected contemporaneously were used to investigate the proposed chain of associations. Due to the cross-sectional nature of the analytic sample, the direction of associations could not be determined and reciprocal relations between variables was a persistent concern; reciprocal relations could have biased associations toward 0 or towards 1, or both. From the present analysis, for example, it is unclear whether home-based involvement led to low achievement or whether families responded

to low achievement by increasing their home-based involvement activities. Future research should investigate the proposed chain of associations in a longitudinal dataset that has multiple waves of data on the variables of interest so that directionality of associations can be investigated.

Additionally, the analyses for this study were limited by the relatively small sample size (and level of missing data relative to sample size) in relation to the complexity of the model. As a result, covariates could not be included when estimating path analyses, raising concerns of potential omitted variable bias and confounded results. Moreover, data on immigrant families in the PSID were collected to reflect a nationally representative sample and could not be used for model comparison within and between all immigrant groups. Thus, future studies should not only replicate this study with a dataset with multiple waves of data, but also with a dataset that has a large enough sample size that allows for covariates to be added into the model and for between and within group comparisons to be made to determine whether patterns of association differ between and within immigrant groups. This would be particularly useful to investigate in the future given the divergent achievement trajectories demonstrated between different immigrant groups.

Third, future studies should seek to incorporate more nuanced measures of each construct. The perplexing relationships between role construction and child outcomes, for example, may be explained in part by the limited nature of the role construction measure in this analysis. First, it is a two-item measure that attempts to capture a complex and nuanced phenomenon related to immigrant families' cultural orientations and values. It is likely that this variable does not adequately capture families' role beliefs about education. Moreover, one of the items, "*Since most parents lack special training in education, they should not question the*

teacher's teaching methods" may be considered a loaded question because it implies that teachers automatically know more than parents regardless of whether that is the truth. Such a blatant statement highlighting a power differential in the question is likely to guide families' responses in a direction that makes families' role construction seem more dissimilar to U.S. culture regardless of what it might be in actuality. Moreover, a more comprehensive role construction measure would allow investigation of whether immigrant families' role construction is domain specific.

Similarly, this study only investigated the quantity of school-based involvement activities and community ties. However, as discussed earlier, quantity is not equivalent to quality and outcomes can vary depending on the quality of interactions. Thus, it is possible that the null results for both of these constructs are a result of measurement error. The inclusion of a quality measure for both of these constructs may reveal significant associations between involvement antecedents and school-based involvement.

Fourth, all of the behavior outcomes are based on the primary caregiver's report, which may lead to reporter bias. The current findings are suggestive of evidence that is in contrast to literature purporting that children of immigrant families generally exhibit similar levels of behavior problems in relation to their native born counterparts (Harker, 2001), and in cases of low-income families, are significantly less likely to exhibit high levels of behavioral problems as their native counterparts (Reardon-Anderson, Capps, & Fix, 2002). As such, future studies should seek to include the perspective of teachers and students as well to garner a more comprehensive indication of child behavior outcomes and its associations with immigrant families' role construction around education.

Finally, since immigrant family educational involvement is embedded within the environmental contexts in which they live, future studies should seek to include variables on school climate and neighborhood characteristics for a more comprehensive understanding of factors that may influence families' educational involvement. The inclusion of these variables in an analysis with longitudinal data will allow more advanced statistical techniques, such as hierarchical SEM to be employed. Just as reanalysis of the Coleman report using multilevel modeling found that in contrast to findings based on OLS regression, schools do make a difference in student achievement (Borman & Dowling, 2010), it is possible that reanalysis with more advanced statistical techniques will demonstrate different patterns of association between social capital, involvement antecedents, family educational involvement, and child outcomes.

Study Strengths

Despite several important limitations, this study adds to the extant literature on immigrant families in three important ways. First, the present study is unique from prior studies on family educational involvement because it is a within-group analysis of immigrant families, most of whom are minorities. Currently, there is a dearth of studies on the normative development of minority children. Rather, the majority of the literature on minority children and families follow a cultural deprivation model where the focus is on how minority groups lack certain cultural benefits and advantages which lead to developmental deviations from Caucasian, middle-class populations (Garcia-Coll, et al., 1996; Spencer, 2006). Given that most studies favor examining between-group comparisons with an emphasis on outcome differences, this study meets the call for more studies on intra-group variability and the processes that drive normative development among children from minority, immigrant groups.

Second, although Hoover-Dempsey and Sandler's (1997) theoretical model on family involvement has been widely used to inform that field of educational involvement, no study except for Green and colleagues (2007) has empirically evaluated this model in sum. Thus, results from this dissertation provide some initial empirical support for their model among immigrant families.

Finally, few studies have used a strength-based, ecological system approach to understand what affects why immigrant families decide to become involved in their children's education and how that involvement in turn affects student achievement. Many studies, for example, neglect to take other more distal variables into account when analyzing immigrant family involvement; they ignore the differences in cultural values between the host and home country, families' psychological characteristics, and social capital. That is, in order to help immigrant children at-risk for academic underachievement and poor behavior outcomes realize their academic potential, it is important to understand how these processes operate with immigrant families so that strategies and policies can be tailored toward effectively increasing family involvement to increase student achievement and behavioral wellbeing.

Conclusion

As the social and economic future of the United States depends increasingly on investments in the life chances of immigrant children (Hernandez, 2009; Takanishi, 2004), it is imperative to understand how best to promote their educational success and socio-emotional well-being. Toward this end, the present study used path analysis to investigate a theoretically-based model linking family psychosocial factors, home- and school-based family educational involvement, student achievement, and behavioral outcomes. Motivated by a strength-based

approach, this study also examined social capital as a potential point of leverage for increasing immigrant families' educational involvement.

Results provided some initial empirical evidence for Hoover-Dempsey and Sandler's (1997) theoretical model and indicated potential areas for interventions to target to increase immigrant family involvement (i.e., families' social support and feelings of self-efficacy). However, as evident from the null findings with school-based involvement and the negative relationship between role construction and student behavior, results also suggest that family educational involvement processes may occur differently for immigrant families than for their native-born counterparts. Consequently, these results bring the concept of equifinality to the forefront and further underscore the importance of conducting more within-group research to understand how best to help immigrant families chart a route to educational success and socio-emotional well-being for their children.

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Appendix A. Construct Measures and Items

	Item
Social Capital	
Community Ties	*Please tell me how often you have participated in the following activities within the past 12 month. How often has the other caregiver?* Neighborhood meeting Church or other religious club or activity Parenting classes or parent support groups Athletic team Visiting a friend's or neighbor's house Going to a community center like YMCA Scouting (e.g., Boy Scouts, Girl Scouts) Neighborhood watch
Social Support	*In the past month have you… (Yes/No)?* Received any help with things like child care, transportation, repairs to your home or car, or other kinds of work around the house? Provided any help with child care, transportation, repair to home or car, or other kinds of work around the house to anyone in the past month? Received any moral or emotional support such as advice or encouragement from friends or relatives? Provided moral or emotional support such as advice or encouragement to friends or relatives?
Involvement Antecedents	
Self-Efficacy	
Pearlin Mastery Scale - Short	*Please indicate your level of agreement with the following statements (strongly agree, agree, disagree, strongly disagree).* There is really no way I can solve some of the problems I have Sometimes I feel that I'm being pushed around in life I have little control over the things that happen to me I often feel helpless in dealing with the problems of life

Appendix A. Construct Measures and Items (continued)

	Item
Role Construction	
Parental Modernity Scale	*Please indicate your level of agreement with the following statements (strongly agree, agree, neither agree or disagree, disagree, strongly disagree)*
	Since most parents lack special training in education, they should not question the teacher's teaching methods
	Children should always obey the teacher
Opportunities	
Barriers to Involvement	*How often has each of these made it difficult for you to be involved? Would you say not in the current school year, once, or more than once?*
	Work Schedule
	Lack of info provided by the school
	Difficulty understanding the assignments
	Information sent by the school is in a language you do not understand
	Transportation
	School staff unresponsive to concerns
	Phone calls are not returned by the school staff
	Child care problems
	Other
Family Educational Involvement	
School-based Activities	*Please indicate Yes or No.*
	Before the start of the school year, did you obtain information about who would be child's teacher?
	Before the start of the school year, did you meet with child's teacher?
	During the current school year, how often have you participated in any of the following activities at child's school? (Never/Once/More than Once)

Appendix A. Construct Measures and Items (continued)

	Item
	Volunteered in any classroom, school office, or library?
	Had a conference with child's teacher?
	Had a conference with child's school principal?
	Had an informal conversation with child's teacher?
	Had an informal conversation with child's principal?
	Attended a school event in which child participated such as a play, sporting event or concert?
	Attended a meeting of the PTA or other such organization at child's school?
	Met with a school counselor at child's school?
Home-based Activities	
Communication about School	
	In the last 12 months, please tell me how often you discussed the following with child. (Never/Rarely/Occasionally/Regularly)
	School activities or events of particular interest to child
	Things child has studied in class?
	Child's experiences in school?
Family Activities	*In the past month, how often did you and child [do activity X]? (Not in the past month/One or two times in the past month/About once a week/ Several times a week/Every day)*
	Wash or fold clothes together?
Family Activities (continued)	
	Do dishes together?
	Prepare food together?
	Do arts and crafts together?
	Play sports or do outdoor activities together?
	Clean the house together?
	Build or repair something together?

Appendix A. Construct Measures and Items (continued)

	Item
Cognitive Stimulation in the Home	
	HOME Cognitive Stimulation Subscale
School Expectations for Child	
	How much schooling would you like child to complete? *High School, Vocational Training, Some College, Associate Degree, BA/BS, MA or Teaching, MD/Law/PhD*
Child Outcomes	
Achievement	
	Woodcock-Johnson Letter-Word Recognition
	Woodcock-Johnson Passage Comprehension
	Woodcock-Johnson Calculations
	Woodcock-Johnson Applied-Problems
Behavior	
Problem Behaviors	Behavior Problems Index Externalizing Subscale
	Behavior Problems Index Internalizing Subscale
Positive Behavior	*Please indicate how much each statement applies to child on a scale from 1-5, where 1 means "not at all like your child," and 5 means "totally like your child," and 2, 3, 4 are somewhere in between.* Is cheerful, happy Waits (his/her) turn in games and other activities Does neat, careful work Is curious and exploring, likes new experiences Thinks before (he/she) acts, is not impulsive Gets along well with other children Usually does what you tell (him/her) to do Can get over being upset quickly

	Is admired and well-liked by other children
	Tries to do things for (himself/herself), is self-reliant

Appendix B. Transformation of Non-normally Distributed Study Variables

	Transformation
Social Capital	
Community Ties (highest)	Square Root
Social Support (mean)	Square
Involvement Antecedents	
Role Construction	Square Root
Opportunities	Square
Family Educational Involvement	
Expectations about School	Square
Child Outcomes	
Externalizing	Square Root
Positive Behavior	Cubic
Covariates	
Household Income	Log
Parent Education (mean)	Square

Appendix C. Path Model Results with all Outcome Variables in One Model

Weighted Unstandardized FIML Estimates and Selected Fit Indices for Model with All Outcome Variables

	b (SE)
Paths	
Ties-> Role	0.00 (0.06)
Ties->Self	0.09 (0.14)
Ties->Opp	-2.99 (4.04)
Supp->Role	0.11 (0.10)
Supp->Self	0.52* (0.19)
Supp->Opp	20.70* (6.27)
Role->School	-0.53 (0.85)
Role->Home	0.79* (0.32)
Role->Expect	0.78 (0.66)
Self->School	-0.05 (0.50)
Self->Home	0.29* (0.13)
Self->Expect	0.06 (0.26)
Opp->Home	-0.00 (0.00)
Opp->School	-0.01 (0.01)
Opp->Expect	0.01 (0.01)
School->Ach	0.01 (0.05)
Expect->Ach	0.12* 0.05)
Home->Ach	-0.12 (0.11)
School->Beh	0.01 (0.04)
Expect->Beh	0.07 (0.05)
Home->Beh	-0.04 (0.09)
School->Pos Beh	4.57 (3.04)
Expect->Pos Beh	1.29 (1.41)
Home->Pos Beh	-12.73 (7.97)
Modifications	
Home->School	0.66* (0.23)
Self->Role	0.14* (0.04)
Role->Beh	0.97* (0.34)
Select Fit Indices	
χ^2 (*df)*	42.30 (27)
p-value	0.03
RMSEA; 90% CI	0.06; (0.02 - 0.09)

Note. χ2 = Chi-Square, *df* = Degrees of Freedom, RMSEA = Root Mean Square Error of Approximation, 90% CI = 90% Confidence Interval

*p< .05, + p < .10

Appendix D. Sample Chi Square Comparisons for Constrained and Unconstrained Multi-group Models

	Achievement			Behavior Problems			Positive Behavior		
	χ^2	*df*	RMSEA	χ^2	*df*	RMSEA	χ^2	*df*	RMSEA
H_o	6.87	8	0.03	9.12	8	0.03	3.80	7	0.00
High vs Low Parent Education									
H_u	160.97	42	0.18	218.98	42	0.21	170.63	40	0.19
H_c	121.92	20	0.24	165.08	19	0.29	108.41	17	0.24
Child U.S. Born vs Foreign Born									
H_u	329.78	54	0.24	213.81	43	0.21	134.56	45	0.15
H_c	288.05	30	0.31	166.03	20	0.28	127.97	27	0.20

Note. H_o = Original Model, H_u = Unconstrained Model, H_c = Constrained Model

Appendix E. Path Models using Residuals from Achievement Regressed on Child Age

Weighted Unstandardized FIML Estimates and Selected Fit Indices for Path Model of Residuals of Achievement Regressed on Child Age

	b (SE)
Paths	
Supp->Role	0.10 (0.10)
Supp->Self	0.44* (0.20)
Supp->Opp	19.39* (5.77)
Role->School	-0.56 (0.89)
Role->Home	0.50 (0.35)
Role->Expect	0.58 (0.70)
Self->School	-0.17 (0.50)
Self->Home	0.31* (0.13)
Self->Expect	-0.12 (0.25)
Opp->Home	-0.00 (0.00)
Opp->School	-0.00 (0.01)
Opp->Expect	0.01 (0.01)
School->Res Ach	0.03 (0.05)
Expect->Res Ach	0.11* (0.05)
Home->Res Ach	-0.21+ (0.11)
Modifications	
Home->School	0.72* (0.20)
Self->Role	0.13* (0.04)
Opp->Self	0.01+ (0.00)
Expect->Home	0.13* (0.04)
Role->Res Ach	0.80* (0.39)
Select Fit Indices	
χ^2 (*df)*	6.87 (8)
p-value	0.55
RMSEA; 90% CI	0.00; (0.00 – 0.08)

Note. χ2 = Chi-Square, *df* = Degrees of Freedom, RMSEA = Root Mean Square Error of Approximation, 90% CI = 90% Confidence Interval

*p< .05, + p < .10

Appendix F. Hierarchical OLS Regression Models

After estimating the path models, a series of hierarchical OLS regression models were estimated with a full set of child and family covariates[8] (i.e., race, child gender, child age, whether child born in the U.S., families' average level of education, household income) to evaluate the robustness of significant associations found in the path analyses. First, each social capital variable was used to estimate each involvement antecedent in separate models with all child and family covariates. In comparison with the final path models, once covariates were included in the model, the association between social support and involvement antecedents was attenuated though the associations approached statistical significance and were in the same direction as in the path models; higher levels of social support predicted higher levels of self-efficacy and opportunities for involvement ($p < .05$). Table 7 presents the corresponding output.

[8] Families' reading ability in English was not included in the subsequent regression models because it was highly correlated with families' average level of education (r =.51). Since families' average level of education was correlated with more variables, families' English reading ability was excluded from regression models to reduce potential multicollinearity problems. Similarly, child grade was highly correlated with child age (r = .97) and was excluded from subsequent models because child age was more strongly correlated with variables of interest.

Appendix F. Hierarchical OLS Regression Models (continued)

Table 7.

Weighted OLS Regression Models with Covariates: Involvement Antecedents Regressed on Social Capital (N = 189)

	Role Construction		Self-Efficacy		Opportunities	
Ties	0.1 (0.08)		0.19 (0.19)		2.27 (4.76)	
Support		0.09 (0.19)		0.39+ (0.19)		15.13+ (7.36)
Black/Other	-0.02 (0.16)	-0.01 (0.12)	-0.58+ (0.31)	-0.49 (0.35)	-12.26 (8.57)	-8.54 (8.59)
White	0.13 (0.13)	0.12 (0.12)	-0.34 (0.21)	-0.38+ (0.22)	11.76 (7.48)	9.28 (7.80)
Asian	0.16 (0.10)	0.14 (0.09)	-0.02 (0.20)	-0.07 (0.22)	10.69* (5.26)	10.12+ (5.70)
Male Child	0.02 (0.09)	0.00 (0.08)	0.16 (0.14)	0.11 (0.13)	-3.64 (3.62)	-5.07 (3.43)
Child Age	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.11* (0.06)	-0.09 (0.06)
Child U.S. Born	0.06 (0.08)	0.07 (0.07)	0.24 (0.16)	0.24 (0.15)	9.04* (4.07)	8.38* (3.85)
Fam Edu Attain	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.02 (0.03)	0.01 (0.04)
Income	-0.14 (0.30)	-0.13 (0.36)	-0.60 (0.40)	-0.62+ (0.36)	-0.70 (10.10)	-1.46 (9.11)
R^2	0.13 - 0.27	0 .11 - 0.30	0.15 - 0.22	0.16 - 0.25	0 .18 - 0.20	0 .21 - 0.30

Note. An R^2 from each multiply imputed data set is reported. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$

Appendix E. Hierarchical OLS Regression Models (continued)

Next, each family educational involvement variable was regressed on each involvement antecedent in separate models. Since social support approached significance as a predictor ($p \leq .10$) of all three involvement antecedents in the previous models, it was also included in the models predicting family educational involvement. Output is presented in Tables 8a, 8b, and 8c. No variables significantly predicted school-based involvement. Similarly, no key variables significantly predicted school expectations with the exception of family educational attainment; more highly educated families had higher expectations, on average ($b = .01$).

In contrast, self-efficacy and opportunities for involvement were both significant predictors of home-based involvement. Families reporting higher levels of self-efficacy engaged in more home-based involvement activities ($b = .35$) while families reporting more opportunities for involvement engaged in fewer activities at home ($b = -.01$). There were two significant covariates as well. Families with a male child engaged in lower levels of family involvement activities in the home (range $b = -.30$ to $-.36$) while families with higher levels of education engaged in higher levels of home-based involvement activities ($b = -.01$).

Appendix E. Hierarchical OLS Regression Models (continued)

Table 8a.

Weighted OLS Regression Models with Covariates: School Involvement Regressed on Involvement Antecedents (N = 189)

	Family School-based Involvement *b* (SE)					
Social Capital						
Support		0.15 (0.51)		0.01 (0.59)		0.14 (0.61)
Inv Antecedents						
Role	-1.06 (0.76)	-1.08 (0.78)				
Self-Efficacy			0.09 (0.37)	0.09 (0.39)		
Opportunities					-0.01 (0.01)	-0.01 (0.01)
Covariates						
Black/Other	-0.33 (0.79)	-0.32 (0.80)	-0.22 (0.85)	-0.23 (0.83)	-0.37 (0.84)	-0.37 (0.82)
White	0.37 (0.67)	0.34 (0.67)	0.25 (0.67)	0.24 (0.68)	0.29 (0.67)	0.28 (0.67)
Asian	-0.35 (0.52)	-0.35 (0.52)	-0.48 (0.54)	-0.48 (0.54)	-0.43 (0.54)	-0.42 (0.54)
Male Child	0.31 (0.34)	0.30 (0.35)	0.29 (0.34)	0.29 (0.35)	0.28 (0.34)	0.27 (0.35)
Child Age	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
Child U.S. Born	-0.21 (0.38)	-0.22 (0.38)	-0.32 (0.38)	-0.32 (0.38)	-0.25 (0.39)	-0.25 (0.39)
Fam Edu Attain	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Income	-0.56 (1.18)	-0.58 (1.20)	-0.38 (1.33)	-0.38 (1.35)	-0.42 (1.38)	-0.43 (1.40)
R^2	0.06 - 0.09	0.06 - 0.09	0.03 - 0.07	0.04 - 0.07	0.03 - 0.06	0.04 - 0.06

Note. An R^2 from each multiply imputed data set is reported. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$

Appendix E. Hierarchical OLS Regression Models (continued)

Table 8b.
Weighted OLS Regression Models with Covariates: School Expectations Regressed on Involvement Antecedents (N = 189)

	School Expectations *b* (SE)					
Social Capital						
Support		-0.11 (0.35)		-0.14 (0.33)		-0.21 (0.35)
Inv Antecedents						
Role	-0.24 (0.7)	-0.21 (0.73)				
Self-Efficacy			0.00 (0.22)	0.02 (0.22)		
Opportunities					0.00 (0.01)	0.00 (0.01)
Covariates						
Black/Other	-0.38 (0.53)	-0.40 (0.53)	-0.36 (0.5)	-0.38 (0.51)	-0.33 (0.52)	-0.36 (0.51)
White	0.68 (0.4)	0.69+ (0.4)	0.63 (0.39)	0.66+ (0.39)	0.60 (0.37)	0.62 (0.38)
Asian	0.17 (0.38)	0.17 (0.38)	0.15 (0.36)	0.15 (0.36)	0.12 (0.36)	0.11 (0.37)
Male Child	-0.38 (0.26)	-0.37 (0.26)	-0.37 (0.26)	-0.37 (0.26)	-0.36 (0.26)	-0.34 (0.26)
Child Age	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Child U.S. Born	-0.31 (0.27)	-0.3 (0.27)	-0.33 (0.27)	-0.33 (0.27)	-0.36 (0.26)	-0.36 (0.26)
Fam Edu Attain	0.01* (0.00)	0.01* (0.00)	0.01* (0.00)	0.01* (0.00)	0.01* (0.00)	0.01* (0.00)
Income	0.21 (0.71)	0.25 (0.70)	0.20 (0.73)	0.24 (0.72)	0.21 (0.74)	0.24 (0.74)
R^2	0.10 - 0.16	0.11 - 0.16	0.10 - 0.14	0.11 - 0.15	0 .10 - 0.14	0.11 - 0.14

Note. An R^2 from each multiply imputed data set is reported. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$

Appendix E. Hierarchical OLS Regression Models (continued)

Table 8c.

Weighted OLS Regression Models with Covariates: Home Involvement Regressed on Involvement Antecedents (N = 189)

	Family Home-based Involvement *b* (SE)					
Social Capital						
Support		0.15 (0.26)		0.01 (0.27)		0.29 (0.34)
Inv Antecedents						
Role	0.01 (0.4)	0.01 (0.38)				
Self-Efficacy			0.36* (0.13)	0.36* (0.14)		
Opportunities					-0.01+ (0.00)	-0.01* (0.00)
Covariates						
Black/Other	-0.05 (0.34)	-0.01 (0.34)	0.18 (0.34)	0.19 (0.33)	-0.13 (0.34)	-0.08 (0.34)
White	0.23 (0.20)	0.21 (0.20)	0.34+ (0.18)	0.34+ (0.17)	0.3 (0.19)	0.29 (0.19)
Asian	-0.11 (0.23)	-0.11 (0.22)	-0.08 (0.19)	-0.08 (0.20)	-0.03 (0.21)	0.00 (0.21)
Male Child	-0.3* (0.13)	-0.32* (0.13)	-0.35** (0.12)	-0.35** (0.12)	-0.33* (0.13)	-0.36** (0.13)
Child Age	-0.01** (0.00)	-0.01* (0.00)	-0.01* (0.00)	-0.01* (0.00)	-0.01** (0.00)	-0.01** (0.00)
Child U.S. Born	0.15 (0.14)	0.14 (0.14)	0.05 (0.14)	0.05 (0.13)	0.22 (0.14)	0.22 (0.14)
Fam Edu Attain	0.01** (0.00)	0.01** (0.00)	0.00** (0.00)	0.00** (0.00)	0.01** (0.00)	0.01** (0.00)
Income	-0.13 (0.40)	-0.15 (0.39)	0.04 (0.40)	0.04 (0.39)	-0.16 (0.38)	-0.20 (0.36)
R^2	0.30 – 0.32	0.30 - 0.33	0.34 – 0.45	0.34 – 0.37	0.32 – 0.33	0.33 - 0.37

Note. An R^2 from each multiply imputed data set is reported. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$

Appendix E. Hierarchical OLS Regression Models (continued)

In the following step, separate models were estimated with each child outcome regressed onto each type of family educational involvement (Model 1). To parallel the finding in the path models that find a direct pathway from involvement antecedents to child outcome, a model where each child outcome was regressed directly on each involvement antecedent was estimated (Model 2). Finally, a model that regressed each child outcome on every domain of interest is included as well (Model 3). Table 9a presents output for achievement, Table 9b presents output for behavior problems, and Tale 9c presents output for positive behavior.

As evident in following tables, no primary variables of interest were significant in predicting any of the child outcomes, achievement, behavior problems, or positive behavior in the OLS regression models. Moreover, across all models only child age and families' level of education were significant in predicting achievement.

Appendix E. Hierarchical OLS Regression Models (continued)

Table 9a.

Weighted OLS Regression Models with Covariates: Achievement (N =189)

	Achievement									
	Model 1 *b* (SE)			Model 2 *b* (SE)			Model 3 *b* (SE)			
Social Capital										
Support							0.25 (0.23)	0.20 (0.28)	0.23 (0.25)	0.20 (0.22)
Inv Antecedents										
Role				0.33 (0.29)				0.33 (0.28)		
Self-Efficacy					0.07 (0.06)				0.04 (0.08)	
Opportunities						0.00 (0.00)				0.00 (0.00)
Family Involvement										
School-based	0.02 (0.03)									
Expectations		0.04 (0.03)								
Home-based			-0.01 (0.06)							
Covariates										
Black/Other	-0.21 (0.18)	-0.21 (0.17)	-0.22 (0.17)	-0.20 (0.17)	-0.18 (0.17)	-0.16 (0.17)	-0.18 (0.17)	-0.17 (0.15)	-0.16 (0.16)	-0.15 (0.16)
White	0.13 (0.28)	0.10 (0.28)	0.13 (0.28)	0.08 (0.24)	0.15 (0.28)	0.08 (0.27)	0.09 (0.29)	0.04 (0.26)	0.10 (0.30)	0.05 (0.27)
Asian	0.24+ (0.13)	0.23+ (0.13)	0.23+ (0.13)	0.19 (0.13)	0.24+ (0.13)	0.18 (0.13)	0.23+ (0.12)	0.18 (0.12)	0.23+ (0.12)	0.19 (0.13)
Male Child	-0.02 (0.11)	0.01 (0.11)	-0.02 (0.11)	-0.02 (0.10)	-0.02 (0.11)	0.01 (0.10)	-0.02 (0.10)	-0.03 (0.10)	-0.03 (0.11)	-0.01 (0.11)
Child Age	0.04** (0.00)	0.04** (0.00)	0.04** (0.00)	0.04** (0.00)	0.04** (0.00)	0.04** (0.00)	0.04** (0.00)	0.04** (0.00)	0.04** (0.00)	0.04** (0.00)
Child U.S. Born	0.06 (0.11)	0.06 (0.11)	0.05 (0.11)	0.02 (0.11)	0.03 (0.11)	0.00 (0.11)	0.03 (0.11)	0.00 (0.10)	0.02 (0.11)	0.00 (0.11)
Fam Edu Attain	0.00** (0.00)	0.00** (0.00)	0.00** (0.00)	0.00** (0.00)	0.00** (0.00)	0.00** (0.00)	0.00** (0.00)	0.00** (0.00)	0.00** (0.00)	0.00** (0.00)
Income	0.28 (0.26)	0.25 (0.25)	0.25 (0.25)	0.30 (0.24)	0.29 (0.26)	0.25 (0.25)	0.25 (0.25)	0.31 (0.25)	0.27 (0.25)	0.25 (0.25)
R^2	0.78 – 0.81	0.78 – 0.82	0.78 – 0.81	0.80 - 0.82	0.78 – 0.81	0.78 – 0.82	0.78 – 0.83	0.80 – 0.83	0.78 – 0.83	0.79 – 0.83

Note. An R^2 from each multiply imputed data set is reported. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$

Appendix E. Hierarchical OLS Regression Models (continued)

Table 9b.

Weighted OLS Regression Models with Covariates: Behavior Problems (N =189)

	Behavior Problems									
	Model 1 *b* (SE)			Model 2 *b* (SE)			Model 3 *b* (SE)			
Social Capital										
Support							0.25 (0.68)	0.23 (0.62)	0.32 (0.70)	0.23 (0.75)
Inv Antecedents										
Role				1.17+ (0.64)				1.06 (0.80)		
Self-Efficacy					-0.12 (0.26)				-0.19 (0.22)	
Opportunities						0.00 (0.00)				0.00 (0.01)
Family Involvement										
School-based	-0.06 (0.07)									
Expectations		0.07 (0.05)								
Home-based			-0.02 (0.22)							
Covariates										
Black/Other	-0.74 (0.68)	-0.69 (0.73)	-0.72 (0.73)	-0.71 (0.65)	-0.80 (0.70)	-0.70 (0.73)	-0.64 (0.55)	-0.64 (0.52)	-0.73 (0.57)	-0.64 (0.57)
White	0.37 (0.33)	0.31 (0.33)	0.36 (0.32)	0.21 (0.31)	0.32 (0.32)	0.33 (0.34)	0.33 (0.33)	0.21 (0.30)	0.26 (0.33)	0.32 (0.32)
Asian	0.03 (0.33)	0.06 (0.34)	0.06 (0.34)	-0.10 (0.35)	0.05 (0.34)	0.05 (0.34)	0.07 (0.34)	-0.08 (0.36)	0.05 (0.34)	0.05 (0.33)
Male Child	0.09 (0.19)	0.09 (0.20)	0.06 (0.24)	0.08 (0.23)	0.09 (0.20)	0.07 (0.20)	0.05 (0.22)	0.07 (0.24)	0.08 (0.22)	0.06 (0.22)
Child Age	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Child U.S. Born	-0.14 (0.18)	-0.10 (0.18)	-0.12 (0.18)	-0.2 (0.19)	-0.10 (0.18)	-0.14 (0.18)	-0.14 (0.18)	-0.20 (0.19)	-0.10 (0.18)	-0.15 (0.18)
Fam Edu Attain	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Income	0.38 (0.78)	0.39 (0.84)	0.40 (0.85)	0.48 (0.69)	0.32 (0.77)	0.41 (0.86)	0.33 (1.02)	0.37 (0.93)	0.22 (0.96)	0.34 (1.02)
R^2	0.03 – 0.12	0.03 – 0.12	0.02 – 0.13	0.10 – 0.30	0.03 – 0.14	0.02 – 0.12	0.03 – 0.27	0.10 – 0.30	0.03 – 0.27	0.04 – 0.27

Note. An R^2 from each multiply imputed data set is reported. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$

Appendix E. Hierarchical OLS Regression Models (continued)

Table 9c.

Weighted OLS Regression Models with Covariates: Positive Behavior (N = 189)

	Positive Behavior									
	Model 1 *b* (SE)			Model 2 *b* (SE)			Model 3 *b* (SE)			
Social Capital										
Support							1.48 (29.76)	3.59 (23.29)	-3.41 (32.79)	2.31 (33.84)
Inv Antecedents										
Role				-52.93 (34.59)				-50.15 (35.24)		
Self-Efficacy					11.95 (10.94)				12.78 (12.86)	
Opportunities						0.03 (0.15)				-0.02 (0.30)
Family Involvement										
School-based	4.96 (3.88)									
Expectations		1.72 (1.52)								
Home-based			9.24 (10.80)							
Covariates										
Black/Other	6.69 (35.92)	5.75 (38.90)	5.62 (38.87)	4.75 (35.56)	12.51 (38.51)	5.49 (39.17)	5.05 (32.87)	5.22 (31.98)	11.53 (32.49)	5.32 (33.52)
White	-8.98 (10.52)	-9.11 (11.78)	-9.84 (11.98)	-1.38 (9.94)	-4.20 (10.07)	-8.17 (11.02)	-8.25 (12.77)	-2.43 (10.89)	-3.55 (13.45)	-7.95 (11.27)
Asian	-16.71 (11.08)	-19.56 (12.70)	-18.24 (12.00)	-11.63 (11.78)	-18.61 (12.56)	-19.49 (12.51)	-19.02 (11.65)	-11.91 (11.56)	-18.24 (11.76)	-18.51 (10.93)
Male Child	-3.99 (5.99)	-1.84 (6.98)	0.30 (9.07)	-2.90 (7.94)	-4.33 (6.46)	-2.37 (6.70)	-2.72 (7.65)	-3.34 (8.56)	-4.25 (7.23)	-2.93 (7.92)
Child Age	-0.05 (0.11)	-0.04 (0.11)	0.01 (0.11)	0.03 (0.11)	-0.04 (0.10)	-0.04 (0.11)	-0.03 (0.11)	0.03 (0.12)	-0.04 (0.11)	-0.03 (0.11)
Child U.S. Born	-2.57 (6.12)	-3.50 (5.68)	-5.56 (5.31)	-0.52 (7.64)	-7.00 (4.97)	-4.31 (5.81)	-4.22 (5.75)	-0.98 (7.45)	-7.22 (5.32)	-4.10 (5.95)
Fam Edu Attain	-0.09 (0.08)	-0.09 (0.09)	-0.13 (0.09)	-0.05 (0.07)	-0.10 (0.10)	-0.08 (0.09)	-0.08 (0.09)	-0.06 (0.07)	-0.10 (0.09)	-0.08 (0.09)
Income	-12.37 (48.82)	-14.56 (55.23)	-12.81 (53.05)	-17.75 (38.64)	-7.84 (49.57)	-14.23 (54.71)	-13.08 (55.64)	-16.51 (41.92)	-5.92 (52.10)	-13.54 (55.38)
R^2	0.13 – 0.15	0.07 – 0.12	0.09 – 0.16	0.13 – 0.35	0.07 – 0.16	0.07 – 0.11	0.09 – 0.16	0.17 – 0.36	0.12 – 0.22	0.09 – 0.16

Note. An R^2 from each multiply imputed data set is reported. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$

Appendix E. Hierarchical OLS Regression Models (continued)

Lastly, in an effort to parallel the multi-group path analyses, all OLS regression models were re-estimated for various subgroups, including only Latino families, non-Latino families, families with low levels of education (i.e. < 10th grade), families with high levels of education (i.e., > 10th grade), child born in the U.S., and child born in a foreign country. In the following tables[9], only significant results ($p \leq .10$) are presented.

Table 10 presents all significant results for the Latino families. Table 11a presents all significant results for families with low levels of educational attainment (i.e., families with less than a 10th grade education) while Table 11b presents results for families with more than a 10th grade education. Tables 12a and 12b present significant results for children born in the U.S. and children born in foreign country, respectively. Tables 13a and 13b present significant results for male and female children. There are at least three interesting results to note.

First, self-efficacy was a positive predictor of home-based involvement across all models, except for children born in a foreign country and female children. This was a robust pattern across the path models as well. Second, similar to the path models, role construction was positively associated ($p \leq .10$) with behavior problems and negatively associated with positive behavior in the models estimated with children born in the U.S. and for girls whereas these associations were not evident in models estimated with children born in a foreign country or for boys. Third, home-based involvement was positively associated with behavior problems in models estimated with families with low levels of education. Specifically, families with less than a 10th grade education who engaged in high levels of home-based involvement activities had children who exhibited more behavior problems. This pattern was not evident in any other model.

[9] Models for non-Latino families are not presented because no variables were significant.

Appendix E. Hierarchical OLS Regression Models (continued)

Table 10.
Weighted OLS Regression Models with Covariates: Latino Families Only (n = 122)

	Latino Families Only				
	Opportunities *b* (SE)	Home Involvement *b* (SE)			
Social Capital					
Support	17.13+ (8.72)		0.03 (0.32)		0.36 (0.38)
Inv Antecedents					
Role					
Self-Efficacy		0.34* (0.14)	0.32+ (0.16)		
Opportunities				-0.01+ (0.00)	-0.01* (0.00)
Family Involvement					
School-based					
Expectations					
Home-based					
Covariates					
Male Child	-5.84 (4.47)	-0.34* (0.16)	-0.35* (0.16)	-0.34* (0.16)	-0.39* (0.17)
Child Age	-0.15* (0.07)	0.00 (0.00)	0.00 (0.00)	-0.01* (0.00)	-0.01* (0.00)
Child U.S. Born	4.49 (4.81)	0.14 (0.18)	0.16 (0.18)	0.30 (0.18)	0.31 (0.19)
Fam Edu Attain	-0.02 (0.05)	0.01** (0.00)	0.01** (0.00)	0.01** (0.00)	0.01** (0.00)
Income	-1.05 (14.74)	-0.22 (0.53)	-0.25 (0.52)	-0.43 (0.45)	-0.5 (0.43)
R^2	0.12 – 0.26	0.22 – 0.40	0.22 – 0.41	0.27 – 0.30	0.23 – 0.36

Note. An R^2 from each multiply imputed data set is reported. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$

Appendix E. Hierarchical OLS Regression Models (continued)

Table 11a.

Weighted OLS Regression Models with Covariates: Families with Low Levels of Educational Attainment

	Families with Low Educational Attainment (n = 102)						
	Home Involvement *b* (SE)			Behavior Problems *b* (SE)			Positive Behavior *b* (SE)
Social Capital							
Ties						0.41+ (0.21)	
Support		0.15 (0.36)	0.48 (0.45)				
Inv Antecedents							
Role							-19.76+ (10.09)
Self-Efficacy	0.37* (0.16)	0.33+ (0.18)					
Opportunities			-0.01+ (0.01)				
Family Involvement							
School-based				0.08+ (0.04)			
Expectations							
Home-based					0.38** (0.12)		
Covariates							
Black/Other	-0.14 (1.07)	-0.08 (1.02)	-0.12 (0.81)	-0.46 (0.57)	-0.46 (0.63)	-0.51 (0.65)	-13.68 (24.42)
White							
Asian	0.00 (0.39)	-0.01 (0.39)	-0.01 (0.43)	-0.37 (0.53)	-0.35 (0.52)	-0.24 (0.54)	-6.92 (11.76)
Male Child	-0.42* (0.18)	-0.44* (0.19)	-0.52* (0.20)	0.16 (0.23)	0.32 (0.22)	0.21 (0.22)	-12.11* (5.31)
Child Age	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.01 (0.00)	-0.01 (0.00)	-0.01* (0.00)	0.05 (0.08)
Child U.S. Born	0.12 (0.20)	0.14 (0.21)	0.27 (0.20)	-0.25 (0.22)	-0.36+ (0.19)	-0.30 (0.22)	-1.79 (6.03)
Income	-0.12 (0.70)	-0.17 (0.69)	-0.50 (0.59)	-0.32 (0.54)	-0.02 (0.55)	-0.14 (0.58)	1.61 (14.18)
R^2	0.14 – 0.25	0.15 – 0.26	0.14 – 0.24	0.07 – 0.12	0.16 – 0.20	0.08 – 0.21	0.11 – 0.21

Note. An R^2 from each multiply imputed data set is reported. Also, the White race category was excluded from the models for families with low education levels because no White families were in this category. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$

Appendix E. Hierarchical OLS Regression Models (continued)

Table 11b.

Weighted OLS Regression Models with Covariates: Families with High Levels of Educational Attainment

	Families with High Educational Attainment (n = 86)				
	Home Involvement *b* (SE)		Achievement *b* (SE)	Behavior Problems *b* (SE)	
Social Capital					
Ties					
Support		0.07 (0.44)			
Inv Antecedents					
Role					1.74+ (0.88)
Self-Efficacy	0.48* (0.17)	0.47+ (0.21)			
Opportunities			0.01+ (0.00)		
Family Involvement					
School-based				-0.2+ (0.12)	
Expectations					
Home-based					
Covariates					
Black/Other	0.24 (0.42)	0.27 (0.38)	-0.07 (0.21)	-0.49 (0.66)	-0.42 (0.69)
White	0.47* (0.21)	0.46+ (0.24)	0.22 (0.29)	0.86+ (0.42)	0.46 (0.41)
Asian	0.09 (0.25)	0.09 (0.24)	0.39+ (0.20)	0.38 (0.32)	0.26 (0.34)
Male Child	-0.32 (0.21)	-0.31 (0.21)	-0.04 (0.18)	0.02 (0.27)	-0.09 (0.36)
Child Age	-0.01 (0.00)	-0.01 (0.00)	0.04** (0.00)	0.01* (0.01)	0.01 (0.00)
Child U.S. Born	-0.09 (0.20)	-0.09 (0.19)	0.06 (0.16)	0.06 (0.28)	-0.14 (0.3)
Income	-0.36 (0.53)	-0.35 (0.51)	-0.47 (0.31)	0.74 (1.26)	1.04 (0.97)
R^2	0.20 – 0.46	0.24 – 0.47	0.85 – 0.86	0.27 – 0.35	0.25 – 0.51

Note. An R^2 from each multiply imputed data set is reported. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$

Appendix E. Hierarchical OLS Regression Models (continued)

Table 12a.

Weighted OLS Regression Models with Covariates: Children U.S. Born (n = 130)

	Children Born in the U.S.					
	Home Involvement *b* (SE)				Behavior Problems *b* (SE)	Positive Behavior *b* (SE)
Social Capital						
Support		0.10 (0.32)		0.36 (0.41)		
Inv Antecedents						
Role					1.55+ (0.77)	-75.06+ (44.03)
Self-Efficacy	0.42* (0.15)	0.4* (0.17)				
Opportunities			-0.01+ (0.01)	-0.01* (0.01)		
Family Involvement						
School-based						
Expectations						
Home-based						
Covariates						
Black/Other	0.27 (0.45)	0.27 (0.46)	0.03 (0.37)	0.06 (0.40)	-0.56 (0.82)	4.44 (44.76)
White	0.33 (0.21)	0.32 (0.22)	0.27 (0.25)	0.26 (0.24)	0.49 (0.43)	0.07 (16.95)
Asian	-0.23 (0.26)	-0.25 (0.26)	-0.15 (0.31)	-0.13 (0.30)	-0.02 (0.44)	-6.64 (14.97)
Male Child	-0.43** (0.15)	-0.44** (0.15)	-0.44** (0.16)	-0.48** (0.17)	0.05 (0.32)	-6.91 (11.50)
Child Age	0.00+ (0.00)	0.00+ (0.00)	-0.01* (0.00)	-0.01* (0.00)	0.00 (0.00)	-0.03 (0.14)
Fam Edu Attain	0.01** (0.00)	0.01** (0.00)	0.01** (0.00)	0.01** (0.00)	0.00 (0.00)	-0.06 (0.11)
Income	0.41 (0.42)	0.41 (0.43)	0.07 (0.48)	0.05 (0.47)	0.82 (0.98)	-35.83 (54.66)
R^2	0.35 – 0.46	0.35 – 0.48	0.32 – 0.35	0.33 – 0.40	0.15 – 0.39	0.21 – 0.47

Note. An R^2 from each multiply imputed data set is reported. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$

Appendix E. Hierarchical OLS Regression Models (continued)

Table 12b.
Weighted OLS Regression Models with Covariates: Children Foreign Born (n = 59)

	Children Born Outside U.S.			
	Opportunities *b* (SE)	School Involvement *b* (SE)	Positive Behavior *b* (SE)	
Social Capital				
Support	19.8+ (9.82)			
Inv Antecedents				
Role		-2.13+ (1.20)		
Self-Efficacy				
Opportunities				
Family Involvement				
School-based				
Expectations			5.23* (2.42)	
Home-based				8.99+ (4.65)
Covariates				
Black/Other	-26.82 (19.29)	0.69 (1.60)	14.25 (20.10)	16.43 (23.84)
White	9.98 (11.79)	0.10 (1.23)	-13.32 (11.98)	-15.57 (11.72)
Asian	-8.5 (10.06)	0.31 (0.95)	-9.59 (14.27)	-13.76 (12.39)
Male Child	-4.48 (6.96)	0.88 (0.75)	6.21 (6.96)	3.08 (7.09)
Child Age	-0.19+ (0.11)	0.02 (0.01)	0.22 (0.14)	0.27+ (0.14)
Fam Edu Attain	0.06 (0.05)	0.00 (0.01)	-0.07 (0.05)	-0.07 (0.05)
Income	20.23 (16.27)	0.49 (2.06)	14.52 (19.73)	24.66 (19.04)
R^2	0.38 – 0.43	0.11 – 0.26	0.28 – 0.34	0.26 – 0.33

Note. An R^2 from each multiply imputed data set is reported. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$

Appendix E. Hierarchical OLS Regression Models (continued)

Table 13a.
Weighted OLS Regression Models with Covariates: Male Child (n = 86)

	Male Child		
	Home Involvement *b* (SE)		
Social Capital			
Support			0.48 (0.54)
Inv Antecedents			
Role			
Self-Efficacy	0.45+ (0.21)		
Opportunities		-0.01+ (0.01)	-0.01+ (0.01)
Family Involvement			
School-based			
Expectations			
Home-based			
Covariates			
Black/Other	0.24 (0.86)	-0.48 (0.83)	-0.26 (0.78)
White	0.20 (0.31)	0.16 (0.29)	0.11 (0.31)
Asian	-0.23 (0.34)	-0.13 (0.32)	-0.13 (0.30)
Child Age	-0.01* (0.00)	-0.01* (0.00)	-0.01* (0.00)
Child Born in U.S.	-0.05 (0.22)	0.09 (0.21)	0.10 (0.21)
Fam Edu Attain	0.01* (0.00)	0.01** (0.00)	0.01** (0.00)
Income	-0.32 (0.54)	-0.55 (0.45)	-0.57 (0.45)
R^2	0.35 - 0.53	0.32 - 0.37	0.34 - 0.48

Note. An R^2 from each multiply imputed data set is reported. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$

Appendix E. Hierarchical OLS Regression Models (continued)

Table 13b.
Weighted OLS Regression Models with Covariates: Female Child (n = 103)

	Female Child		
	Achievement *b* (SE)	Behavior Problems *b* (SE)	Positive Behavior *b* (SE)
Social Capital			
Ties		0.52* (0.23)	
Support			
Inv Antecedents			
Role			-16.53+ (9.73)
Self-Efficacy			
Opportunities			
Family Involvement			
School-based			
Expectations	0.08+ (0.05)		
Home-based			
Covariates			
Black/Other	-0.06 (0.23)	-0.46 (0.40)	-5.03 (9.83)
White	0.09 (0.39)	0.28 (0.40)	-4.51 (9.86)
Asian	0.24 (0.17)	0.17 (0.38)	-13.84 (10.83)
Child Age	0.04** (0.00)	0.00 (0.00)	0.10 (0.10)
Child Born in U.S.	0.20 (0.15)	-0.05 (0.25)	1.95 (6.71)
Fam Edu Attain	0.00+ (0.00)	0.00 (0.00)	-0.09+ (0.05)
Income	0.12 (0.38)	0.46 (0.64)	-3.12 (18.32)
R^2	0.80 - 0.83	0.11 - 0.23	0.22 - 0.26

Note. An R^2 from each multiply imputed data set is reported. ** $p \leq .01$, * $p \leq .05$, + $p \leq .10$